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LEADER INDULGENCE AND GROUP PERFORMANCE[1]

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A GROUP's effectiveness is at one time or another a function of organizational, technical, motivational, personal, and interpersonal variables. However, the attempt to identify specific variables and to demonstrate through empirical studies their consistent relationship with performance has often led to frustration. Explanations for the failure include the use of contrived as compared with normal group tasks, subjects (*Ss*) whose knowledge of one another is largely a consequence of the research itself, inappropriate formulation and administration of independent or predictor variables, unreliable measures of group performance, and the use of a limited number of groups. It was hoped that the awareness of these pitfalls would benefit the present effort.

This research focused on the contribution to group effectiveness of one aspect of the leader-men relationship. The general hypothesis is that the more a leader satisfies the needs of his men, the more effective group performance. The hypothesis derives from a theory of interpersonal relationships to the effect that when Individual A satisfies a need of Individual B, then Individual B tends to satisfy a need of Individual A. A need and its satisfaction may be material or immaterial, involve attitudes and behaviors. A and B may be conscious or unconscious of the situation. Nevertheless, for the theory to be relevant there must be a past relationship or experience of satisfaction for B with A. When B, then, satisfies in return a need for A, there is the "reciprocality of indulgences." Of course, although A may satisfy a need for B, the latter may not always be able to reciprocate a need satisfaction for A.

Individual A can represent a leader and Individual B any member of his group. Assume a leader satisfies certain needs of his individual group members. Group members can often reciprocate a leader's indulgences to them through effective performance, since a group's behavior generally reflects directly on a leader.

Most research in the past on effective leadership, and consequently on effective group performance, has centered on the nature of the leader. How competent is he technically? What are his personality characteristics? Insufficient attention has been devoted to group members and their relationship to the leader or his to them. The

[1] Studies A and B were done under the egis of the now defunct Institute for Research in Human Relations. Psychological Research Associates, Incorporated conducted Studies C and D. Appreciation is expressed to the latter organization for providing some of the original data to use in preparing this article. Studies A, B, and C were sponsored by the Personnel Research Branch of The Adjutant General's Office, Department of the Army. The Office of Naval Research funded further analyses of data collected in Study B. Study D was supported by the former Air Force Personnel and Training Research Center. Portions of Studies A and B formed a part of a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Department of Social Relations at Harvard University. The points of view or findings conveyed explicitly or implicitly are not to be construed as necessarily reflecting the position of any element or component of the Department of Defense. Moreover, this article is not an official publication under any contract. Many people have contributed in various ways to this series of research studies. Particular appreciation is deserved by all the authors of government contract reports listed in the references. Special thanks are extended to Gardner Lindzey, dissertation advisor. Last but not least, I feel a deep sense of indebtedness to hundreds of military personnel without whose many hours of grueling participation in the projects this article could not have been written.

notion has not been adequately explored with empirical tests that a leader's effectiveness might be a function of the characteristics of the group members and the resultant relationship with the particular leader.

Some studies have been concerned with the effects on group performance of the type of leadership or group atmosphere. White and Lippitt (1953), studying adult leadership patterns for boys' clubs, concluded that although not as much work was produced in the democratic boys' club as the autocratic club there was in the former greater work motivation and greater originality. The laissez-faire boys' club was inferior in quality and quantity of work to the other clubs. The Katz, Maccoby, Gwin, and Floor (1951) study, where productivity of railroad workers was positively related to the supervisor's differentiation of his role with others, and the Berkowitz study (1951), where conference morale was negatively correlated with the chairman's sharing of his role, lend support to the White and Lippitt findings of the ineffectiveness of the laissez-faire group.

McCurdy and Lambert (1952) and Adams (1954) stated that neither a democratic nor an authoritarian atmosphere proved the more favorable for group performance. In his Prudential study, where the emphasis was not on the group atmosphere, Pelz (1951) found that supervisors of high-producing work groups either made recommendations which generally went through for the promotion of the workers or they made no recommendations at all. On the other hand, supervisors of low-producing work groups often recommended promotions which were generally not granted. These results are somewhat consistent with the hypothesis that the leader who does help his people has an effective group.

In analyzing a leader's behavior toward his group and group effectiveness, investigators have assumed the uniformity of member needs across groups. However, when needs are derived from general attitudes or values, individuals, and hence, groups are likely to vary in their needs. Consequently, a leader's ability to satisfy group member needs which stem from values presents another possible determinant of group effectiveness.

Values or general attitudes, regardless of when or how they develop, can affect one's expectations or desires concerning how others should behave, and also determine one's own behavior. Authoritarians and equalitarians were found by Sanford (1950) to vary consistently in what they believed were proper role behaviors for a variety of leaders in society. Sanford stressed the importance of the follower's satisfaction with a leader as a function of the former's needs and the latter's personality or ability to meet these needs. Both the needs and ability to satisfy these needs were viewed as a function of the authoritarian-equalitarian syndrome. The data indicated that a group of authoritarians in a situation would desire their leaders to behave in certain ways, whereas equalitarians in the same situation would want different behaviors. Groups might be expected to vary, then, in satisfaction with a leader depending upon his authoritarianism. Eager and Smith (1952) and Haythorn, Couch, Haefner, Langham, and Carter (1956a) found that paper-and-pencil measures of authoritarianism related consistently with an individual's overt behavior. Based on his study of authoritarianism and decision making, Vroom (1959) suggested the need to investigate the effects of the interaction of leader and follower characteristics.

The theoretical discussion and the various studies support the following specific hypotheses. The general hypothesis is, of course, that the more a leader satisfies the needs of his group members, the more effective group performance.

Hypothesis I. The more a leader has a history of solving the everyday and common problems of his group members, the more effective group performance.

Hypothesis II. The more a leader's behavior satisfies the role expectations that group members have for a leader, the more effective group performance.

Hypothesis III. The more a leader's authoritarianism is similar to his group members, the more effective group performance.

The hypotheses were tested during a series of field studies covering a period of 6 years, 1952 to 1957, and the research was conducted at Fort Benning, Georgia; Camp Atterbury, Indiana; Fort Lewis, Washington; and Stead Air Force Base, Reno, Nevada. In each of the four studies, which used military populations and tasks, other hypotheses were tested and the findings are reported elsewhere. The attempt was made to replicate the findings of one study in those conducted later and to pursue new hypotheses. M. Dean Havron, president of Human Sciences Research, Incorporated, was the principal investigator in each study.

Study A

Observations of infantry rifle squads during field problems suggested, for example, that a leader's stature and tone of voice bore little, if any, relationship to his control of the squad or to the squad's performance. The significant variables appeared to be less obvious and more subtle. On the basis of discussions with noncommissioned officers and with one particular squad leader (SL) who had just been tested on a field problem the idea was developed of reciprocality of indulgences and its relationship to squad effectiveness. The sergeant explained that when back at the post he tried to make life easy for his men and he helped them in personal matters. Therefore, when he was on the "spot" in the field his men tried to perform well so that the credit from superiors came to him as the SL responsible for their effectiveness.

Hypotheses I and II were tested in Study A. Although the problem solving (PS) hypothesis evolved directly from the discussions with noncommissioned officers, the role discrepancy (RD) hypothesis handles more specific expectations or desires on the part of group members for leader behavior. While the PS hypothesis is concerned with needs common to nearly all people, the RD hypothesis involves needs for leader behavior which may vary considerably from one group member to another and from one group to another.

Method

Subjects. The *S*s in Study A were the men of the 13 highest scoring and the 13 lowest scoring Army rifle squads of 63 squads tested in 1952 at Camp Atterbury, Indiana, on a criterion rifle squad field problem (RSFP). Criterion RSFP scores reflected the performance of both the SL and squad men. However, there was no overlapping in separate scores between the "effective" and "ineffective" squads for leader scores or group scores (Havron, Greer, & Galanter, 1952). At the time of the research, the Army infantry rifle squad consisted of nine men: a leader, an assistant, a two-man automatic rifle team, and five riflemen. As the basic unit of the infantry the squad closes with and attempts to overcome the enemy.

Independent variables. The 5-item Problem Solving Index measured how much a man perceived his SL as generally helpful or as a problem solver. Each item was responded to in terms of five-step intervals. A squad man indicated his SL was a problem solver with a high rating. Examples of the items are: "Is your squad leader good at figuring out easy ways to do things when the squad has a detail?" "How often does your squad leader help the squad men out in personal matters?"

The 13-item Role Discrepancy Index measured the extent to which an SL was perceived as behaving according to a man's ideal. For instance, squad men were asked: "How strictly should a squad leader control his squad?" "How far should a squad leader go in talking about his personal life with his men?"

A man was first asked for each of the 13 items how an SL should behave. The alternatives then presented were in terms of five steps, and ranged from such statements as "never" to "always," and from "none" to "a lot." After responding to the thirteenth item, the same questions were asked again with the squad man responding in terms of his perception of his own SL's behavior. The sum of discrepancies between actual and ideal responses was assumed to be an index of the extent to which an SL's role behaviors were *not* satisfying a squad man's needs.

Performance criterion. The dependent variable was a squad's performance on a 6-hour, blank-firing, simulated combat infantry RSFP. The field problem was developed by Havron, Fay, and McGrath (1952) working in close collaboration with military tacticians at the Infantry School, Fort Benning, Georgia. Considerable realism was introduced into the problem through noise and confusion produced by explosives and live resistance. The number of aggressors along a squad's route varied from one to six. During the RSFP the SL was the pivotal figure. Communications between the squad and umpires went through the SL. The pressure was often on the SL to make prompt decisions. All leaders appeared to try hard to have their squads do well. Indeed, a squad's per-

formance was considered by the military to reflect largely on the SL.

Although technical knowledge contributed to performance, only a modest amount of competence was needed in order to perform well in many situations. Motivation to perform well, then, was critical. On the RSFP squad men could fail to carry out their functions without too much awareness by other squad men that they were falling down on the job. However, the inappropriate behavior, such as not maintaining proper formation, not aiming rifle fire, and not using cover/concealment would be noted by umpires and reflected in the squad's final score.

Ratings of squad performance were made by trained observers under specified circumstances and at certain times during the course of the RSFP. Most ratings pertained to group behavior without regard to particular individuals. However, SL score and a squad score could be derived separately. Observers had a median reliability of .88 for interrater agreement for 20 randomly selected squads (Havron, Fay, & McGrath, 1952).

Procedure. Effective and ineffective squads had to be selected after all of the 63 squads at Camp Atterbury were tested. A delay of 2 to 6 weeks occurred between field testing and the interviews in which the hypotheses were tested. Eight civilian interviewers spent between 1 and 2 hours with each of the squad men reading questions to the respondent and recording his verbal responses. Neither interviewers nor interviewees knew whether a squad man had been a member of an effective or ineffective squad. Problem solver and role discrepancy items appeared toward the end of the interview; additionally, the men were assured their anonymity would be preserved.

The score on the PS index was the simple sum for the five items. A score on the RD index represented the summation of differences for each one of the 13 items between the position on the continuum for the desired SL behavior and the position for the perceived SL behavior. Chi square was used for both indexes to test the significance of the difference between the distributions of scores for all men in the effective groups and all men in the ineffective groups. A more rigorous statistical criterion required that for both indexes the t test be employed to determine the significance of the difference between the mean squad scores for effective and ineffective groups. The mean in these cases represented the mean of the average score for each of the 13 squads.

Results

Problem solving. The distributions of PS scores for men in effective and ineffective squads were grouped in three categories and the chi square test indicated the predicted difference was significant ($\chi^2 = 8.94$; 2 *df*, $p < .02$). Moreover, effective men perceived their SL as more of a problem solver than ineffective men did on each of the five items in the PS index. For two of the items the difference was significant: "When your squad leader tries to get a 'good deal' for his men, how often is he successful?" ($\chi^2 = 5.40$; 1 *df*, $p < .03$) "When some men in your squad do something wrong, is your squad leader able to handle the situation without taking it to the platoon sergeant or platoon leader?" ($\chi^2 = 8.57$; 2 *df*, $p < .02$). The mean of the squad averages for members on the PS index in each squad in the ineffective group was 15.9 as compared with a mean of averages for effective squads of 17.7. For the ineffective squads the averages ranged from 10.5 to 21.0; for the effective squads the range was 15.5 to 20.7. The standard deviation for the ineffective group means was 2.6 as compared with 1.5 for the effective group. The difference between the variances was not accepted as significant ($F = 3.08$; $df = 12$ and 12, $p < .10$). The difference between the means of the averages for the effective and ineffective groups was significant ($t = 2.10$; 24 *df*, $p < .03$, one-tailed test).

Role discrepancy. Men differed widely in desired SL behavior. Generally, the distributions of responses to the 13 items were flat. The distribution of responses to each ideal leader item for men in effective squads was compared with the distribution for the ineffective squads and similarly for responses concerning actual SL behavior. For only one of the 26 comparisons was there a significant chi square ($p < .05$). Therefore, it cannot be concluded that men of effective squads as compared with men of ineffective squads necessarily differ in their desires for SL behaviors or in how they perceive their squad leaders' behaviors in the areas of the RD items.

The method of obtaining discrepancy scores for the RD index presented a problem because a person who gave a response on the ideal behavior position "3," where "1," "2," "3," "4," and "5" were possible, could not have had a discrepancy greater than two points. The chi square test showed

no significant difference between effective or ineffective men in their response positions to the ideal behavior items. However, men of the effective group had an average potential discrepancy score for each item of 3.10; for the ineffective group the average was 3.01. A lower ceiling, then, was actually placed on the discrepancy scores for men of the ineffective squads. The distributions of scores for both the effective and ineffective squad men on the RD index were skewed toward the direction of low discrepancy scores. The predicted difference between men of effective and ineffective squads was significant ($\chi^2 = 7.78$; 2 *df*, $p < .03$). Individual analysis of the 13 RD items indicated that the mean scores for men of the effective squads were less than the mean scores for men of the ineffective squads in the case of 12 of the 13 items ($p < .01$).

The mean of the averages for the RD scores for the 13 ineffective squads was 13.1, while it was 11.4 for the 13 effective squads. The standard deviations were 3.3 and 3.1, respectively, and the variances did not differ significantly. The range of average scores for the squads in the ineffective group was between 9.3 and 21.8; the range was between 8.0 and 18.0 for squads in the effective group. The difference between the mean average scores of the effective and the ineffective squads of 1.7 was nonsignificant ($t = 1.35$; 24 *df*, $p < .10$, one-tailed test).

An adjustment was made in the scores of the ineffective squads to control the effects of their lower ceiling for discrepancy scores. In making the adjustment it was assumed that the discrepancy score would increase with a higher ceiling by an amount directly proportional to the ratio between the previous discrepancy scores and the potential for discrepancy. As a consequence, the adjusted difference between the mean average scores for the two groups was 2.1 and yielded a t value of 1.65 which approaches significance ($t = 1.71$; 24 *df*, $p < .05$, one-tailed test).

Study B

The purpose of this study was to test Hypothesis III on the similarity between leader and men on authoritarianism and group effectiveness. The analyses were performed using already extant data which had been collected for other purposes (Havron, Fay, & McGrath, 1952). The results of Study A led to Hypothesis III.

Method

Subjects. One hundred 9-man Army infantry rifle squads were the *S*s in Study B. Thirty-seven of these squads were tested in the late spring of 1952 at Fort Benning, and the remaining 63 squads went through the same RSFP that summer at Camp Atterbury, Indiana. The 26 squads of Study A comprised part of the 63 squads tested at Camp Atterbury.

Independent variables. The 16-item Equalitarian Index (EI) developed by Havron, Fay, and McGrath (1952) was described as a measure of the extent to which one accepts the rules and mores of a system according to their merits. In an independent study Masling, Greer, and Gilmore (1955) gave eight psychologists a description of the authoritarian and equalitarian personalities based on the work of Sanford (1950). The judges were then asked to categorize the responses to the items in the EI as either authoritarian or equalitarian. There was 99% agreement in designations among the psychologists, and their consensus designations were in complete agreement with the original scoring procedure. Examples of items in the index are:

A leader:

a. should always control his group sternly (Authoritarian [A] response)
b. is to blame if anything goes wrong (A response)
c. must always consider the wishes of his group (Equalitarian [E] response)

If you have a problem you should:

a. go to your superior or chaplain for advice (A response)
b. talk it over with your friends (E response)
c. try to forget about it (A response)

If you disagree with the leader of your group, you should:

a. try to get him to see your side of it (E response)
b. speak out with your own ideas (A response)
c. follow anyway (A response)

Performance criterion. The 6-hour, blank-firing, four-phase, Army infantry RSFP used in Study B as well as in Study A involved very specific ratings of leader and squad behaviors by trained observers. The total problem score included rat-

ings on leader and squad items; separate SL and squad scores could be derived. In the research reported by Havron, Fay, and McGrath (1952) the dependent variable was taken as the *total* score. A correlation of .66 was found between SL and squad scores for the 100 squads (Greer, 1955). Squad scores were used as the dependent variable in Study B. Squad scores for the 100 squads ranged from 41 to 86 with a mean of 63.5 and standard deviation of 11.0. The median score was 64 with 100 as the highest score possible.

Procedure. On the day following the field problem, each man completed an attitude questionnaire which included the 16-item EI. The product-moment correlation was employed to determine the relationship between the attitude discrepancy on authoritarianism (ADA) for leader and men and squad performance. An ADA score represented the difference between an SL's score on the EI and the mean EI score of his men.

Results

Leader and men relationship on authoritarianism. The mean EI score, a measure of authoritarianism or rather the lack of it, for the 100 SLs in Study B was 8.43; for the 800 squad men it was 7.58. Leaders were significantly *less* authoritarian than their men ($t = 2.17$; $p < .05$, two-tailed test). A nonsignificant correlation of .15 was obtained for the 100 groups between an SL's EI score and the mean EI score for his men.

Authoritarianism and squad effectiveness. The SL's EI score and the mean EI squad score were separately correlated with squad performance. In each case the obtained correlation was .13 and nonsignificant. The possibility was investigated that there might be a relationship between the general similarity on authoritarianism for *all* group members and squad performance, regardless of group's mean position on the attitude continuum. The mean EI score for the nine men in a squad was determined and the differences between each man's score and the mean were summed. A significant correlation of $-.21$ was obtained between authoritarian heterogeneity in the group and squad performance, that is, ineffective performance was associated with men's dissimilarity in authoritarianism ($p < .05$, two-tailed test). Group heterogeneity scores on authoritarianism and ADA scores had a significant correlation of .25 ($p < .05$, two-tailed test).

Leader and men attitude discrepancy and squad effectiveness. The attitude discrepancy as represented by the difference between the SL's score and the mean score for his men on authoritarianism yielded a significant correlation of $-.22$ with squad performance, that is, ineffective performance was associated with leader-men dissimilarity in authoritarianism ($p < .05$, one-tailed test). A significant correlation of $-.18$ ($p < .05$, one-tailed test) was obtained for the 100 squads between the sum of the difference between each man's EI score and the leader's EI score and field performance. Unless otherwise indicated the effect of attitude discrepancy has been based in these studies on mean group member authoritarianism. The data were further analyzed to determine whether it made any difference for the SL to be either higher or lower in his EI score as compared with the mean EI score of his squad men. In those 65 cases where the SL was more equalitarian or less authoritarian than the squad, the correlation between the discrepancy and performance was $-.25$ and significant ($p < .05$, one-tailed test). The correlation was $-.30$ and significant ($p < .05$, one-tailed test) for the 34 cases where the SL was less equalitarian than his men. For one squad there was no difference between the SL's score and the mean score of his men.

Correlations as a function of group's age. Men varied in the length of time they had been members of their squads. The *S*s completed a questionnaire (Greer, 1955) in which they responded to an item on how long they had been in their squads. The item was: "How long have you been a member of this squad? (*a*) one month or less, (*b*) one to three months, (*c*) three to six months, (*d*) six months to one year, (*e*) more than one year." Responses of each of the nine men in a squad were averaged so that squads could be compared in terms of their "ages." The crude measure of a squad's age was used to separate the 100 squads into three fairly equal groups. This procedure essen-

tially rank ordered these three groups of squads in terms of age. Analyses were conducted to determine what effect different squad ages would have on the size of the correlations for different aspects of authoritarianism and squad effectiveness. For the 31 squads where men had been together the longest the correlation between the leader's EI score and the mean for his men was .16 and nonsignificant. This correlation is hardly different from the one when all 100 squads were considered. Table 1 presents additional results. There appears to be no consistent effect of age on squad mean or heterogeneity for EI scores and squad effectiveness. However, the size of the correlation between ADA and squad effectiveness increased as squads became older. A significant correlation of $-.44$ ($p < .01$, one-tailed test) was obtained between the sum of the differences between the SL's EI score and the EI score for each of his men and field performance for the 31 squads in the oldest group. The data in Table 1 further indicate that neither the ADA correlation nor the squad heterogeneity correlation can be attributed to each other.

The midscoring leader and men on authoritarianism and squad effectiveness. In a study of 37 medium bombardment aircrews Adams (1954) related a measure of authoritarianism for the 5 officers in each crew of 11 positions to the crew's performance derived from squadron training reports. The personalities of the officers were assumed to establish the extent of democratic or authoritarian climate in a crew. There was no significant correlation for the total distribution, although there was a suggestion that equalitarianism and effective performance were related. However, the highest performance ratings were received by those crews where officers were generally neither authoritarian nor equalitarian but fell in the middle of the continuum. A correlation ratio achieved significance at the .10 level. Explanations offered included the belief that officers who rated crew performance simply downgraded the democratic crews and that the nature of the tasks the crews faced prevented effective performance by democratic groups.

A possibility not considered by Adams is that men who are neither too authoritarian nor too equalitarian are simply more effective leaders. If the determining variable is the personality of the leader and not the reciprocality of indulgences between SL and men, then the analyses of data in Study B should indicate a curvilinear relationship between the authoritarianism of leaders and squad RSFP score. The attitude discrepancy score between an SL and his men on authoritarianism would seem to have a higher probability of being smaller when the SL is a midscorer. Hence, the ADA correlations in Study B might simply be a statistical artifact of the greater leadership effectiveness of the midscoring SLs.

The correlation ratio was .33 for the nonlinear relationship between the SL's EI score and the squad's performance for the 100 squads. The t value was 3.75, but there

TABLE 1

PRODUCT-MOMENT CORRELATIONS FOR VARIOUS ASPECTS OF AUTHORITARIANISM AND SQUAD EFFECTIVENESS AS A FUNCTION OF GROUP AGE[a]

Authoritarian Aspect	All Groups ($N = 100$)	Youngest Groups ($N = 34$)	Middle Groups ($N = 35$)	Oldest Groups ($N = 31$)
Squad Mean	.13	.07	.19	.12
Squad Heterogeneity	$-.21$*	$-.36$*	$-.10$	$-.19$
Leader-Men Attitude Discrepancy	$-.22$**	.09	$-.25$	$-.46$***

[a] Scores on the Equalitarian Index used as measures of authoritarianism.
* $p < .05$, two-tailed test.
** $p < .05$, one-tailed test.
*** $p < .01$, one-tailed test.

was no significant difference when testing for difference from linearity. If the midscoring SLs were most effective because of inherent leadership ability, then a nonlinear relationship should be higher when the criterion was based solely on those items of performance on which the SL was rated. This eta was .38 with a t value of 4.40, but the test for the difference from linearity was nonsignificant. Moreover, the two etas were hardly different in magnitude.

The correlation ratios, although offering little conclusive evidence, were provocative enough for the matter to be pursued. A group of midscoring SLs on the EI was matched with a group of nonmidscoring leaders on their attitude discrepancies with squad men. According to the personality hypothesis the squad performance scores should be higher in the case of midscoring leaders. SLs scoring 8 and 9 on the EI (leaders' $\bar{X} = 8.43$) were taken as representing the midscoring SLs. The remaining 70 cases were randomly ordered. The 30 midscoring cases were ordered according to the size of the discrepancy between SL and men on the EI. Each of the 30 cases was matched with the first one of the 70 cases where the size of the ADA was identical. Thus, 19 of the 30 cases were matched on this basis. The mean performance score for the 19 squads where the SL was a midscorer was 64.9, while for the other 19 squads where the SL was a nonmidscorer the mean was 63.6. The t value of .35 for the difference between the means was nonsignificant. The results did not offer any statistically significant support to an explanation which is based entirely on the sheer greater leadership ability of the midscorer without reference to the nature of his group.

TABLE 2

MEAN SQUAD PERFORMANCE, MEAN ATTITUDE DISCREPANCY, AND RANK DIFFERENCE CORRELATIONS FOR LEADER-MEN ATTITUDE DISCREPANCY AND SQUAD PERFORMANCE AS A FUNCTION OF LEADER EQUALITARIAN INDEX SCORE FOR THE 100 SQUADS IN STUDY B

Leader Equalitarian Index Score	N	Mean Squad Performance	Mean Attitude Discrepancy	Rank Difference Correlation
3	1	44.0	2.2	–[a]
4	2	56.5	4.2	–
5	12	58.9	2.3	−.33
6	12	62.0	1.6	−.07
7	10	67.0	0.9	−.10
8	9	64.4	0.8	.15
9	21	67.5	1.7	−.48**
10	11	63.2	2.4	.15
11	13	61.0	3.2	−.59**
12	3	68.0	4.7	–
13	4	62.3	5.7	–
14	2	65.5	5.9	–
Mean 8.4		63.5	2.2	

[a] Insufficient N.
** $p < .05$, one-tailed test.

Additional analyses of the data of Study B are shown in Table 2. Although the correlation ratio obtained between leaders' EI scores and squad performance could not be shown to differ significantly from linearity, the mean squad performance scores bear an empirically nonlinear relationship to SL authoritarianism. The mean squad performance score was 66.7 for the 40 SLs falling in the middle of the distribution on EI scores. The 60 extreme scoring SLs had a mean squad performance score of 61.3. The t value was 2.43 for the difference between these means ($p < .02$, two-tailed test). This result could be interpreted as offering support for the personality hypothesis.

The size of the sample in Study B and the restricted range for the EI scores permitted the determination of whether there was any relationship between leader-men ADA and squad performance when SLs had identical EI scores. Statistically significant results would militate against a simple and complete explanation of the overall empirical relationship as based upon the nature of the SL without reference to his group. Table 2 shows a significant rho for the SLs with EI scores at the mode in the distribution and a significant rho for leaders with a score which fell toward one of the tails in the distribution. If the correlations in Table 2 are transformed to z's and averaged, the resulting average correlation is −.20. A correlation of −.20 when based on

an N of 88 would be significant ($p < .05$, one-tailed test). This procedure is, of course, questionable. Nevertheless, there was some statistically significant data, that is, the two significant rho's, to indicate the importance of the leader-men interrelationship on authoritarianism as a contributor to group performance. The findings do not permit any definitive statement on whether or how much the leader's authoritarianism without reference to his men contributes in this situation to group effectiveness.

Several of the analyses performed with all cases in Study B and illustrated in Table 2 were carried out just for those 31 squads where the men had been together the longest and where the ADA correlation was $-.46$. The eight squad leaders who scored 9 on the EI were considered the midscorers. The mean performance score for their squads was 74.1; for the other 23 squads the mean was 64.1. The difference between the means yielded a t value of 3.31 ($p < .01$, 29 df, two-tailed test). Eleven of the 31 SLs had scores falling between 3 and 8; their ADA rho correlation was $-.75$ ($p < .01$, one-tailed test). The eight SLs who scored 9 had a nonsignificant rho of .06. The removal of one case would change the correlation to $-.41$ ($p > .05$). For the 12 SLs who scored between 10 and 13 the correlation was $-.57$ ($p < .05$, one-tailed test). These results can generally be interpreted to support the theory of the reciprocality of indulgences, but the correlations are still suspect because of the possibility that they are a consequence of a statistical artifact. However, the size of the correlations and the restricted ranges of the leaders' EI scores suggest that the correlation did not simply reflect a statistical artifact.

The data indicated, then, that the overall correlation between ADA scores and RSFP scores could not be attributed solely to an artifactual relationship based on the leader's EI score. However, the possibility still existed that the ADA correlation might be due to an artifactual relationship with the mean EI scores of the men in a group. Table 3 presents data similar to Table 2, only this time the mean EI scores of the men were held constant. Bass (1960) pointed out that group heterogeneity on a variable will be forced to become smaller as the group mean approaches either end of the continuum. The data in Table 3 tend to be consistent with this expectation. Since heterogeneity on authoritarianism was found to be negatively correlated with performance, one might expect a positive relationship between extreme group means on authoritarianism and more effective performance. On the other hand, an hypothesis that midscorers on a measure of authoritarianism are more effective would lead to the expectation that groups with nonextreme means would perform more effectively. The data in Table 3 cannot be used to rule out the latter possibility, but, nevertheless, such a tendency is not here even sufficient to mask the tendency for groups with extreme mean EI scores to perform effectively.

The 35 midscoring squads on mean group EI score had a mean field performance score of 61.8. A mean performance score of 64.4 was obtained for the 65 extreme scoring squads on mean group EI score. The difference between the mean performance scores was nonsignificant ($t = 1.15$; 98 df, $p > .05$, two-tailed test).

The mean ADA scores do not appear to bear a relationship with any of the other results in Table 3 although there is a slight tendency for discrepancies to be greater for extreme scoring squads on the EI. The limited range of mean scores in Table 3 perhaps accounted for the failure to obtain a more marked relationship. None of the six correlations was significant between ADA and performance with squad mean EI score held constant. The midpoint of a squad men mean range was used to determine each ADA score for that group. Since all six correlations were in the predicted direction, the Binomial test indicated a significant finding ($p < .02$, one-tailed test). The results in Tables 2 and 3 indicated that the overall correlation between ADA and RSFP cannot be attributed to an artifactual relationship with either the leaders' or men's mean EI scores.

Leader's motivation, attitude discrepancy, and squad effectiveness. In Study B all men

TABLE 3

MEAN SQUAD PERFORMANCE, MEAN SQUAD HETEROGENEITY, MEAN ATTITUDE DISCREPANCY, AND RANK DIFFERENCE CORRELATIONS FOR LEADER-MEN ATTITUDE DISCREPANCY AND SQUAD PERFORMANCE AS A FUNCTION OF MEAN MEN EQUALITARIAN INDEX SCORE FOR THE 100 SQUADS IN STUDY B

Mean Men Equalitarian Index Score[a]	*N*	Mean Squad Performance	Mean Squad Heterogeneity[b]	Mean Attitude Discrepancy	Rank Difference Correlation
5.0–5.4	1	44.0	19.0	2.2	–[c]
5.5–5.9	3	69.0	13.8	2.8	–
6.0–6.4	9	65.6	17.3	1.7	−.17
6.5–6.9	13	61.0	15.8	3.1	−.33
7.0–7.4	23	62.6	18.2	2.2	−.11
7.5–7.9	17	61.9	18.0	1.7	−.17
8.0–8.4	15	62.4	17.9	2.3	−.30
8.5–8.9	11	68.9	17.0	1.8	−.40
9.0–9.4	5	68.2	16.7	2.0	–
9.5–9.9	3	62.3	14.0	2.3	–
Mean 7.6		63.5	17.2	2.2	

[a] Midpoint of each range used in determining attitude discrepancy for rank difference correlation.
[b] Sum of differences between each man's EI score and the mean EI score for all men in a squad.
[c] Insufficient *N*.

had been administered a measure of general Army adjustment. The purpose of the General Army Adjustment Index (GAAI) (Havron, Fay, & McGrath, 1952) was to measure a person's acceptance of the Army and his desire to comply with Army goals. One might infer that an SL's motivation to do well on the RSFP would be reflected in his GAAI score. The correlation was .10 and nonsignificant between SL scores on GAAI and squad performance. The 100 squad cases were separated into generally equal thirds according to the leader's GAAI score and correlations were determined between ADA scores and RSFP scores. The product-moment correlation for the highest third ($N = 36$) of SLs on GAAI was a nonsignificant $-.22$; for the middle third ($N = 37$) it was a significant $-.33$ ($p < .05$); and for the lowest third ($N = 27$) the correlation of $-.03$ was nonsignificant. The top two-thirds ($N = 73$) of SLs on GAAI had a significant correlation of $-.28$ ($p < .05$). There is, then, some evidence to suggest that the motivation of the leader for the task influences the degree of operation of the reciprocality of indulgences.

Relationship with Study A. In Study A comparisons between 13 high scoring squads and 13 low scoring squads on the RSFP indicated that the SLs of effective squads were more apt to be perceived by their men as better problem solvers and more likely to meet their role expectations for an SL. The same 13 high scoring squads had a mean ADA score of 1.4; the 13 low scoring squads had a mean of 2.0. The difference between the means produced a t value of 2.79 ($p < .01$, 24 df, one-tailed test). For the 26 squads in Study A each of the three hypotheses received a confirmation.

The rho correlation between the 26 squad scores on ADA and PS was $-.08$ and between ADA and RD the correlation was .05. Both correlations were nonsignificant. However, the rho correlation between squad scores on PS and RD was $-.70$ and significant ($p < .01$, two-tailed test). These intercorrelations of independent variables strongly suggest that ADA is an independent type of indulgence from the indulgences involved in PS and RD. Moreover, the correlation between squad PS and RD scores for the leaders indicated that as measured there was either a marked overlap in types of indulgences involved or that SLs who satisfied one type of need were, at least, perceived as satisfying the other.

Study C[2]

Method

Hypotheses I and II were again tested in a study (Havron, Lybrand, & Cohen, 1954) with Army infantry rifle squads in 1954 at Fort Lewis, Washington. One hundred and twelve 9-man Army infantry rifle squads were the *Ss* for this study. The PS and RD measures can be found in their entirety in Appendix II of "The Assessment and Prediction of Rifle Squad Effectiveness" (Havron et al., 1954). The PS variable was measured by 10 items either identical or similar to those used in Study A. Although the six items employed to measure the RD variable were all taken from the instrument used in Study A, their administration eliminated the necessity of returning to the item the second time to ask the respondent how he perceived the behavior of his SL. Additionally, the items were scored so that a high score indicated the SL was meeting role expectations. As an example, the first item in this instrument was:

How does your squad leader compare with an ideal leader as to strictness?

a. He is much too strict	(0 points)
b. He is a little too strict	(1 point)
c. He is as strict as he should be	(2 points)
d. He is not quite strict enough	(1 point)
e. He is not nearly strict enough	(0 points)

In addition to the criterion field problem described in Study A scores on two new field problems, a daylight live-firing problem and a night blank-firing problem, patterned after the daylight blank-firing problem, were combined to yield an overall comprehensive measure of a squad's proficiency on RSFPs. The composite score used as the dependent variable in this study represented squad men performance and excluded those items for which the SL was explicitly rated. The *Ss* spent 8 hours over a 2-day period prior to field testing completing predictor instruments. The RSFPs took 20 hours and were administered during the 3 following days. Summated squad men scores for PS and RD were correlated with the composite squad men scores on the field problems.

Results

The product-moment correlation between the 112 squad scores on the PS measure and composite RSFP scores was .16 and significant ($p < .05$, one-tailed test). A significant correlation of .25 was also obtained between scores on the measure of RD and squad performance ($p < .01$, one-tailed test).

[2] The writer served as a consultant to this project with especial reference to the leadership area.

Study D

Study D was conducted at the United States Air Force Survival Training School at Stead Air Force Base near Reno, Nevada. Field research in the Sierra Nevada, in an area approximately midway between Truckee and Sierraville, California, in the late fall of 1956 permitted the further testing of each of the three hypotheses with a somewhat different population and field problem. Although some details of Study D are available elsewhere (Greer, Pearson, & Havron, 1957a, 1957b, 1957c) the present report involves additional analyses of the data.

Method

Subjects. Sixty crews[3] in training at the United States Air Force Training School served as *Ss*. Each crew comprised six men ranging in some cases from airmen third class to lieutenant colonels. An officer always acted as the leader or aircraft commander (AC) for the crew. Almost all crews were members of the Strategic Air Command; at that time these men periodically received survival and evasion training at Stead Air Force Base. The 60 crews were tested over a period of 5 weeks, representing five different classes. Although the school had expected to train students in crews of six men for the five testing weekends, administrative problems actually resulted in training men the first two weekends in crews of 12 men. Since the field problem was to be given to 6-man crews, the 12-man crews had to be divided into 6-man crews for the first and second weekends. The highest ranking officer in a derived crew was designated AC.

Independent variables. The measures used to test the hypotheses in Study D can be found in "Evasion and Survival Problems and the Prediction of Crew Performance: I. Predictor Instruments" (Greer et al., 1957b). Three of the PS items of Study A comprised the measure of the PS variable. Also, the RD hypothesis was tested

[3] This number was based on a contractual obligation. However, a total of 76 crews were tested and the 16 crews were eliminated which failed to complete the greater part of the field problem. These 16 crews represented essentially the groups tested on the first weekend; this period served to establish the field testing procedures.

using eight of the items from Study A. However, the RD questions were phrased in the same manner as those in Study C, but scored in the same way as Study A. The PS and RD items were interspersed among others in a self-administered questionnaire. The 8-item Authoritarian-Equalitarian Scale (A-E scale) was used as the measure of authoritarianism. Sanford (1950) employed the A-E scale as an abridged version of the California F Scale (Adorno, Frenkel-Brunswick, Levinson, & Sanford, 1950) with a weighting in the direction of leadership attitudes. The A-E scale had a repeat reliability of .78 for 200 *S*s, and scores on the A-E scale correlated .67 with scores on the F Scale for 130 college freshmen.

Performance criterion. The Crew Survival Capability Test (CREWSCAT) (Greer et al., 1957c) is a 6-hour, daylight field problem developed to measure the potential effectiveness of a crew to cope with problems faced on downing behind enemy lines. The same general principles were employed in the development of this criterion as for the earlier studies. However considerably more attention was paid to determining the relative importance of various parts of the test for weighting purposes. First, an evasion and survival terminology and definitions were developed; then, 18 critical areas were delineated, for example, navigation, food, security from enemy awareness. A downed crew's goal is to get back to friendly lines without suffering death or capture to any of its members. Theoretically, one could derive a weighting system through simply counting the number of times that a crew met disaster due to each of the 18 critical areas. However, by its very nature one finds great difficulty in getting reliable data on the cause of disaster; there may be no survivors to supply the information.

A probabilistic model was developed as a basis for differential weightings for the various critical areas. Two assumptions were made: problems in critical areas occur in evasion and survival situations with different frequencies, and critical areas vary in the likelihood that their relevant problems will cause disaster. Therefore, a critical area's *disaster-producing probability* is a function of the number of times that a critical area is encountered in evasion and survival experiences and the probability of disaster resulting each time it is met. The *recurrence value* of a critical area was determined from the literature, and the *criticality value* was derived from expert judgments. The relative disaster-producing probabilities or *impediment value* of a critical area was obtained through the use of the recurrence and criticality values for all critical areas. The number of points a particular problem situation or item was worth in the CREWSCAT was determined as a function of its relative importance among other items belonging to the same critical area and of that critical area's relative importance among all the other critical areas. Reliability data on recurrence and criticality values, item weighting, specific results, and problems associated with this technique were described and discussed by Greer et al. (1957a). In Study D as in the other studies the nature of the field problem was developed independently of psychological and interpersonal hypotheses on individual and group requirements for effective performance.

The CREWSCAT starts with the crew assembled at a rendezvous point and progresses with their movement to a meeting with a partisan. The crew is directed to a camp site; after relevant activity there, they move to a recovery area, and finally cross a border. Problem support personnel include communications men, umpires, friendly sentry, and aggressor forces. School experts deemed the CREWSCAT a realistic test, and student comments, both oral and written, reflected the same opinion.

CREWSCAT scores for the 60 crews ranged from 34-80 with a mean of 61.2 and a standard deviation of 10.2. One hundred was the highest possible score. In preparation for a study on the relationship between various independent variables and the continuance of effective performance under conditions of increasing stress the CREWSCAT problem form was keyed differently and new scores were obtained. Those field test items in the problem were excluded which involved sheer technical knowledge and did not require the expenditure of physical energy. Additionally, subscores were then derived for the first half of the CREWSCAT and for the second half. These scores correlated .66 and provide one basis for judging the overall reliability of CREWSCAT scores used in this research.

Procedure. The school's course lasted 17 days of which the first 7 days were spent in formal training at Stead. From the eighth day through the twelfth day men remained at a static camp in the Sierra Nevada where they lived under survival conditions. On the twelfth day the men started a 3-day trek and upon its completion returned to Stead. Study D was tailored to this schedule. On the second evening of the student's stay at the school he completed among other items the A-E scale. *S*s tested on the CREWSCAT completed the PS and RD items the afternoon or evening of the day before they were tested on the CREWSCAT.

On the fourth or fifth day in the field *S*s left their static camp to trek to the research test area. Crews had been requested to reach the test area by 3 PM but most crews did not arrive until 5 PM; and some did not reach the test area until 8 PM The trek from the static camp was extremely arduous, requiring the men to go over a snow-covered mountain while carrying packs weighing more than 40 pounds. *S*s walked between 5 to 10 miles, depending on their abilities to navigate.

When a crew finally arrived at the test area, the men were tired, hungry, thirsty, and extremely irritable; some men had collapsed on the way and required evacuation.

In administering the forms the investigator faced quite a challenge in promoting among crew members even a minimally receptive attitude toward the project. This situation was hardly improved when the *S*s found that they would be aroused commencing at 4:30 A.M. the following morning so that they could take down their tepees, break camp, and pack to be prepared to start the CREWSCAT as early as 6:30 A.M.

Two courses each 2 miles in length started at the test area. Four crews were tested on a course each day with crews starting the problem about three-quarters of an hour apart so that they would not interfere with each other's activities. Scenario personnel remained in their positions and handled in the same manner each of the four crews. The school provided their most qualified instructors to act as umpires. An umpire remained with a crew and rated very specific crew behaviors in terms of two or three categories. Fortunately, no snow fell on the testing days, although the temperature occasionally dropped to −20° at night.

The product-moment correlation was used to determine the relationship between the scores for the various independent variables and performance on the CREWSCAT. In testing Hypothesis III on attitude discrepancy the additional statistical procedure of Study B was followed. Besides deriving the discrepancy between leader and men as a function of the difference between the leader's score and the *mean* for his men on authoritarianism, the discrepancy was also determined through summing the *absolute difference* between each man's score and the score of the leader.

In Study B the correlation between the ADA increased as a function of squad "integrality" or time that the men had been together in the same group. The 60 crews in Study D were separated into integral and nonintegral crews. The 21 crews in the integral group had three or more members in the same crew back at the home base. However, members in some crews in the integral group had known each other for an average of only one month. Nevertheless, this criterion of integrality appeared to be the best one with the available data.

Results

Problem solving and role discrepancy. Summated crew scores for the AC as a problem solver correlated −.15 with crew performance. The correlation was .09 between scores on the RD variable and CREWSCAT performance. Both correlations were nonsignificant and in the direction *opposite* to that hypothesized.

Leader and men comparison on authoritarianism. The mean A-E score for the 60 ACs in Study D was 24.1; for the 300 airmen it was 26.1. Leaders were significantly *less* authoritarian than their men ($t = 2.91$, $p < .01$). A nonsignificant correlation of −.01 was obtained for the 60 groups between an AC's A-E score and the mean A-E score of his men. In Study D, 57 AC's completed the Shipley intelligence test (Shipley, 1940) as well as the A-E scale. However, the intelligence test was administered as a power test rather than a timed test. The correlation between the A-E scores and the subtest of reasoning was .05; for the vocabulary subtest −.07; and for the composite .01. If the reliability and validity of the two measures employed are granted, these nonsignificant correlations are at variance with other findings (Titus & Hollander, 1957). Perhaps, in some military officer populations there may be a slight tendency for some of the more intelligent to be authoritarian as compared with a general population tendency for authoritarianism and intelligence to be negatively related.

Authoritarianism and crew effectiveness. No statistically significant relationship was found between either the leader's A-E score or the crew's mean A-E score and crew performance. The correlations were .14 and .03, respectively. Moreover, the correlation between crew heterogeneity on authoritarianism and performance was −.07 and nonsignificant. Group heterogeneity scores on authoritarianism and ADA scores had a significant correlation of .37 ($p < .01$, two-tailed test).

Leader and men attitude discrepancy and crew effectiveness. The sum of the absolute difference between each crew member's A-E score and that of his AC correlated −.22 with crew performance, that is, ineffective performance was associated with crew members' dissimilarity with the AC on authoritarianism. A correlation of −.27 was obtained for the difference between the mean crew member A-E score and the leader's score and CREWSCAT performance. Both of these correlations were significant ($p <$

TABLE 4

PRODUCT-MOMENT CORRELATIONS FOR VARIOUS ASPECTS OF AUTHORITARIANISM AND CREW EFFECTIVENESS AS A FUNCTION OF THE INTEGRALITY OF GROUPS[a]

Authoritarian Aspect	All Groups ($N = 60$)	Non-integral Groups ($N = 39$)	Integral Groups ($N = 21$)
Crew Heterogeneity	−.07	−.03	−.15
Leader-Men Attitude Discrepancy	−.27**	−.26	−.31

[a] Scores on the A-E scale used as measures of authoritarianism.
** $p < .05$, one-tailed test.

05, one-tailed test).[4] For those 23 crews where mean crew member A-E scores were lower than the AC's the correlation between ADA score, based on the difference between mean crew score and leader's score, and CREWSCAT scores was −.22 ($p > .05$). Where the 36 mean crew member scores were higher than the AC's the correlation was −.33 and significant ($p < .05$, one-tailed test). For one crew there was no difference between the AC's A-E score and the mean score for his men.

Correlations as a function of crew integrality. Integral groups, as defined earlier, are those school crews where three or more members belonged to the same crew at the home base. Table 4 presents data on the effect of integrality on the size of the correlations for crew heterogeneity and ADA and CREWSCAT performance. The results are generally inconclusive but they do indicate that the ADA correlation cannot be attributed to a correlation between crew heterogeneity on authoritarianism and field performance.

The midscoring leader and members on authoritarianism and crew effectiveness. A curvilinear relationship between a leader's authoritarianism and group performance was suggested by analyses in Study B. The comparable eta for Study D was .66 with a t value of 9.43, and the test for difference from linearity produced a significant chi square ($\chi^2 = 36.75$; 9 df, $p < .01$). This finding confirmed what Table 5 suggests. In Study D the mean performance score for crews of the 18 midscoring leaders on authoritarianism was 64.3. For the 42 extreme scoring leaders, 21 on each side of the midscorers, the mean CREWSCAT score was 59.8. A t value of 1.73 was obtained ($p < .05$, one-tailed test).

For the 21 ACs scoring from 11 to 22 on the A-E scale the ADA had a significant rho correlation with crew performance of −.39 ($p < .05$, one-tailed test). A significant rho correlation of −.48 ($p < .05$, one-tailed test) was found for the 18 ACs scoring from 23 to 25 on the A-E scale. On the other hand, the 21 leaders scoring from 26 to 37 yielded a nonsignificant correlation between ADA and group performance of −.12. The possibility that the two significant correlations are statistical artifacts was not rigidly controlled. Additional analysis for

TABLE 5

MEAN CREW PERFORMANCE AND MEAN ATTITUDE DISCREPANCY ON AUTHORITARIANISM AS A FUNCTION OF LEADER A-E SCORE FOR 60 CREWS IN STUDY D

Leader A-E Score	N	Mean Crew Performance	Mean Attitude Discrepancy
11-20	10	52.4	9.1
21-22	11	65.6	4.3
23-24	12	64.7	2.4
25	6	63.7	3.3
26-27	8	58.8	1.7
28-37	13	61.2	5.2
Mean 24.1		61.2	4.6

[4] Of the 76 crews tested 16 were excluded in the original study (Greer et al., 1957a, 1957b, 1957c) from further analysis because of unreliable criterion scores. Nevertheless, analyses based on all 76 crews now indicated a correlation of −.32 between leader-men ADA and CREWSCAT scores when mean A-E scores were used and −.28 when the sum of A-E score differences with the leader was employed. Both correlations were significant ($p < .05$, one-tailed test).

one of the correlations eliminated this criticism. The 18 AC's scoring between 23 and 25 on the A-E scale were assumed for the purpose of the present analysis to have all scored 24. Leader-men attitude discrepancy for these 18 crews was then, the difference between the assumed leader score of 24 for each and the actual mean A-E score for the crew members. The new ADA scores yielded a rho correlation of $-.52$ ($p < .05$, one-tailed test) with CREWSCAT scores; this correlation cannot be attributed to variation in leader A-E scores.

Results in Table 6 again show that as the group mean on authoritarianism becomes more extreme, group performance improves. The 18 midscoring crews on mean group A-E score had a mean CREWSCAT score of 56.8. A mean CREWSCAT score of 63.0 was obtained for the 42 extreme scoring crews on mean group A-E scores. The difference between the mean CREWSCAT scores was significant ($t = 2.26$; 58 df, $p < .05$, two-tailed test). But this time mean crew heterogeneity on authoritarianism showed no evidence of decreasing as mean group scores became more extreme. Moreover, crew heterogeneity on authoritarianism failed to relate significantly with group performance in Study D as it had in Study B.

TABLE 6

MEAN CREW PERFORMANCE, MEAN CREW HETEROGENEITY, AND MEAN ATTITUDE DISCREPANCY AS A FUNCTION OF MEAN MEN A-E SCORE FOR THE 60 CREWS IN STUDY D

Mean Men A-E Scale Score	N	Mean Crew Performance	Mean Crew Heterogeneity[a]	Mean Attitude Discrepancy
20.0-21.9	2	65.5	35.5	3.8
22.0-22.9	4	66.8	23.0	3.5
23.0-23.9	10	62.7	20.9	3.2
24.0-24.9	6	58.3	20.7	5.4
25.0-25.9	7	57.7	18.6	2.6
26.0-26.9	5	57.0	22.4	4.5
27.0-27.9	9	59.4	26.0	4.8
28.0-28.9	10	62.0	23.7	5.1
29.0-29.9	3	66.0	20.3	7.1
30.0-32.9	4	63.3	24.3	6.2
Mean 25.9		61.2	22.8	4.6

[a] Sum of differences between each man's A-E score and the mean A-E score for all men in a crew.

Crews may have differed in conscientiousness during the research. Consequently, a lack of involvement might be reflected in the manner of completing questionnaires and in performance on the CREWSCAT. The men in noninvolved crews might be expected to complete the A-E scale in a random fashion. This reaction would increase the likelihood that such a crew would have a mean A-E score falling toward the middle of the continuum. Crews with means toward the extreme might more likely represent sincere and conscientious effort in responding to the questionnaire and these men might be expected to perform to capacity on the CREWSCAT. Regardless of the value of this hypothesis, crew heterogeneity on authoritarianism did not in Study D prove a sufficient basis for accounting for the better performance of crews whose authoritarian means fell toward the extremes.

Four rank difference correlations with mean crew A-E scores artificially held constant were obtained between ADA and crew performance. The 20 crews with means between 22.0 and 24.9 were for this analysis all considered to have a mean of 23.0. A significant correlation of $-.52$ ($p < .05$, one-tailed test; $\text{rho}_{.01} = .53$) was obtained between the new ADA scores for these 20 crews and performance. For the 18 crews whose A-E means fell between 24.0 and 26.9, and 25.0 was taken as the mean for all, a significant ADA correlation of $-.61$ ($p < .01$, one-tailed test) was found. However, the 21 crews where the means were distributed from 25.0 to 27.9, and 26.0 was taken as the mean for all, there was a nonsignificant correlation of .10. Again, for the 19 crews whose A-E means ranged from 27.0 to 28.9, and the mean for all was taken as 28.0, a nonsignificant correlation of .11 was obtained between ADA and performance. Nevertheless, the data demonstrated that the ADA correlation could not be attributed to an artifactual relationship with mean group authoritarianism.

Leader nonconforming aggressiveness, attitude discrepancy, and crew effectiveness. The suggestion in Study B that the effect of the ADA variable on group performance can be influenced by other characteristics of the leader prompted further analysis of the data in Study D. One of the measures in Torrance's Life Experience Inventory administered to *S*s at Stead was the Nonconforming Aggressiveness Index (NAI) (Torrance & Ziller, 1957). In responding to this index the *S* indicated his past socially nonsanctioned behaviors by responding to questions on such matters as playing hookey, cheating, opposing teachers and parents, and smoking under 12 years. It could be inferred that leaders high in nonconforming aggressiveness, regardless of their similarity on authoritarianism with their men, would not be as involved in the performance of their crews on the CREWSCAT as other leaders. Consequently, for high scoring leaders on nonconforming aggressiveness the effect of the ADA variable might be masked.

The average score for the 60 ACs on nonconforming aggressiveness was 7.2. The product-moment correlation between AC's scores on nonconforming aggressiveness and crew performance was −.08 and nonsignificant. Twenty-one ACs scored between 1 and 5; 21 scored between 6 and 8; and 18 leaders scored from 9 to 15 on the NAI. The ADA rho correlation of −.41 with crew performance was significant for the group of 21 low scoring ACs on the NAI ($p < .05$, one-tailed test). For the mid-scoring group a significant rho correlation of −.38 was obtained ($p < .05$, one tailed test). A significant product-moment correlation, then, of −.46 ($p < .01$, one-tailed test) was obtained between ADA and crew performance for the 42 ACs who scored from 1 to 8 or low and moderate on the NAI. However, for that group of 18 ACs scoring the highest in nonconforming aggressiveness there was a nonsignificant rho correlation of −.12 between ADA scores and CREWSCAT scores.

Leader-men exchange of sociometric responses and crew effectiveness. Sociometric responses given by the airmen to their AC and the relationship of these responses to crew effectiveness can be examined in view of the inconclusive results in Study D for the PS and RD variables. Although sociometric data were also collected in the other studies, they were not used as a vehicle to test the hypotheses of this research since it seemed difficult at that time to infer accurately the determinants of the responses and their relevance here to the theory on the reciprocality of indulgence. However, there were several reasons for believing that responses to the PS and RD measures in Study D were similar to the sociometric responses given by the men to their leaders.

In Study D all crew members spent 4 or 5 stressful wintry days in the High Sierra before testing. For an AC to get his crew to follow school rules and reach school objectives he had to be a taskmaster. Consequently, many men on responding to the PS and RD measures may have simply rated those ACs favorable who were not taskmasters. This tendency may have been compounded with the fact that some members of almost all crews reported to the investigator that they had little, if any, basis in experience to respond to the PS and RD items. Therefore, it seems quite possible that many responses to these items may have been on the same order as sociometric responses.

Three sociometric-type items were responded to by all *S*s in Study D at the same session in the field when they answered the PS and RD questions. The nature of the sociometric questions employed was based partially on the technique developed by Gardner and Thompson (1956). In the present situation the sociometric items were self-administered with a person placing his responses on a scale "one" to "nine." The sum of crew member responses on the sociometric item on friendship for the 60 ACs correlated −.14 with CREWSCAT scores. For the "generally helpful on the course" item the correlation was −.19. The sum of the degrees of nomination given to the leader by his men on "usefulness as aircraft commander" correlated −.17 with crew performance. Although none of the correlations was significant, there was a con-

sistent negative relationship between sociometric value for the AC and crew performance on the CREWSCAT.

The sociometric items used in Study B were derived through pretests and discussions with Korean returnees concerning important aspects of interpersonal relationships. Each *S* in Study B indicated choice, rejection, or indifference to all other squad men in his squad for the 10 items. The sociometric battery can be found in "Small Unit Effectiveness" (Havron, Fay, & McGrath, 1952). Several of the items are:

"If you were told to pick the men whom you wanted to live with in a tent or barracks, what man (or men) would you *choose* and what man (or men) would you *not choose?*"

"If you had to pull four hours guard duty at an ammo dump far from camp, at night, what man would you *want* to be with you, and what man (or men) would you *not want* to be with you?"

The sociometric questionnaire was administered to all squad men in Study B shortly before the RSFP. Sociometric scores were based on the summation of choices or rejections to each of the 10 items given by all squad men for their SL. The sociometric results were based on data for 99 squads; sociometric data for one squad was misplaced. A correlation of .08 was obtained between the total number of choices an SL received and RSFP scores. For the number of rejections an SL received and squad performance the correlation was .11. The correlation with squad performance was .01 when the total number of rejections given to the SL within his squad was subtracted from the total number of choices he received from the same people. All product-moment correlations were nonsignificant. However, when choices and rejections were *added* the correlation between the sociometric responses received by the SL and RSFP scores was .19 ($p < .05$, one-tailed test). With the use of the biserial correlation to compensate for the restricted range, the relationship was determined between the number of choices an SL received for each of the 10 sociometric items and squad performance (Greer, 1955). A correlation of .36 ($p < .01$, one-tailed test) was found for the item concerning whether the SL would be chosen to cover the respondent if the squad man led an advance through an enemy town. Correlations for the other nine items were nonsignificant.

Since the simple number of sociometric responses, regardless of whether they were choices or rejections, was significantly related to squad effectiveness, the mean number of sociometric responses given to the SLs for the 13 effective and 13 ineffective squads of Study A were determined and compared. The effective group had a mean number of 67.1 sociometric responses given to the SL in each squad as compared with 64.4 for the ineffective squads. The difference was nonsignificant ($t = .75$). Moreover, neither the mean squad number of choices nor rejections for the SL differed significantly between effective and ineffective groups.

In Study C (Havron et al., 1954) nine sociometric items either identical or similar to those of Study B were administered in the same manner to men in the 112 squads. The number of sociometric responses received by the SL, regardless of whether they were choices or rejections, correlated .03 with squad performance and was nonsignificant.

Data in the various studies suggest that there was some tendency for the leader to receive sociometric choices when he placed on his men a minimum of task demands. Analysis of the relationship between the sociometric responses a leader gives to his men and group effectiveness may indicate another basis for the sociometric response. For *S*s in Study B a correlation of .21 was found for the total number of choices an SL gave to his men and squad performance. For rejections given by the SL to his men the correlation was −.22. When rejections were subtracted from choices given by an SL, the correlation with squad performance was .26. The slightly higher correlation in this last case may be attributed to the forced correlation which exists between choices and rejections. The three correlations were each significant ($p < .05$). However, when an SL's choices and rejections for his men were simply added, the total number yielded a nonsignificant correlation of .05 with squad performance. For *S*s in Study C the num-

ber of positive sociometric choices given by the leader correlated .10 with squad performance and was nonsignificant.

In Study D the AC's response for his men on the sociometric friendship item at Stead correlated −.09 with crew performance ($N = 57$). For the friendship item in the field the correlation was .06 ($N = 60$). The AC's sociometric responses for his men on the helpfulness item correlated .11 with the CREWSCAT ($N = 59$), and .17 for the "usefulness as aircraft commander" item ($N = 60$). In several cases the AC had failed to complete all the items. Although none of the correlations was significant between the AC's sociometric responses for his men and crew performance, the change in direction and increasing size of the correlations suggested that as the AC came to know his men better, his sociometric responses correlated more positively with crew performance, and that the correlations increased in magnitude as the sociometric criterion became more directly related to technical competence. Moreover, the data may be interpreted to suggest that the ACs in Study D were not as personally involved in the performance of their men as the SLs in Study B where the correlations were larger and significant. Generally, then, the results suggest that one basis for a leader's sociometric responses for his men is their competence and/or willingness to "put out" for him.

Further analyses of problem solving and role discrepancy data in Study D. Crew scores on the RD measure correlated −.57 with the sociometric responses the crew gave their leaders in the field as friend. This correlation suggested for Study D a marked relationship between liking an AC and perceiving his behavior as matching that which is desired in an ideal leader. This finding suggests that sociometric feelings toward the AC produced a halo effect and influenced their responses to PS and RD questions.

When the RD scores for the 21 integral crews were related to performance, the correlation was .00 as compared with .09 for all 60 crews. The correlation between RD scores and crew performance with friendship partialed out or held constant was −.10 and nonsignificant. Nevertheless, in taking into account integrality and partialing out the friendship component the correlation became more consistent with expectation.

In Study A there was some indication of a greater variability in mean PS scores for the 13 ineffective squads as compared with the 13 effective squads. This finding suggested that among groups where the leaders receive high mean PS scores there was a greater variability in criterion performance scores than among groups where the leaders receive a low mean PS score. The crews in Study D were rank ordered in terms of the degree to which the AC was perceived as a problem solver. Twenty-two crews were designated the "high problem solver group"; and 21 crews the "low problem solver group." The mean score for the high problem solver group on the CREWSCAT was 58.6, while the mean score for the low problem solver group was 63.9. The standard deviation for the high problem solver group was 11.9 and 7.6 for the low problem solver group. A significant F value of 2.43 was obtained for the difference between the two variances ($df = 21$ and 20, $p < .05$). These data support the possibility of two general explanations for AC's receiving high PS scores. In the one case, high PS scores may have reflected the leader's past indulgences to his men which led to effective performance. On the other hand, the second explanation, which has to account for much of the final result in Study D since there was an overall negative correlation between PS scores and crew performance, is that some men rated a leader who was not a taskmaster high as a problem solver. As a consequence, in such cases, there may have been a lower criterion score.

Intercorrelations among independent variables. Again, as in Study B, the ADA variable correlated nonsignificantly with PS and RD; the correlation for the 60 cases in Study D were, respectively, .19 and .07. Crew PS and RD scores yielded a significant correlation of −.33 ($p < .05$), that is, the more a group perceived the leader as a problem solver the less he was perceived as deviating from role expectations.

In Table 7 are presented the intercorrelations among the three independent variables

and various sociometric responses given to the leader in Studies B and D.

In each study there was a significant positive correlation between sociometric choices and PS scores and a significant negative correlation with RD scores. Conversely, sociometric rejections correlated positively with RD scores and negatively with PS scores. Scores on the ADA variable did not correlate significantly with the sociometric responses in either Study B or D. These results further suggest that ADA involves a rather independent type of indulgence from PS and RD. Consequently, the data indicated that it was not unreasonable to find a significant correlation between ADA and crew performance in Study D and no significant correlations with the criterion for the other independent variables.

Discussion

Three hypotheses were derived from the theory of the reciprocality of indulgences and tested in four studies. The hypotheses generally state that the more a leader indulges his men, the more effectively they perform on a field problem. The PS and RD hypotheses were tested in Studies A, C, and D. The hypothesis on the leader-men ADA was tested in Studies B and D. The PS and RD hypotheses received statistical support in Studies A and C, but not in Study D. The hypothesis on ADA was confirmed in both Studies B and D, using different measures of authoritarianism. The failure to receive statistical confirmation for two of the three hypotheses in Study D can be examined in the light of conditions present in that study. One of the pitfalls earlier enumerated may have been responsible, that is, the lack of relevant experience leader and men had had with one another prior to the CREWSCAT field problem.

TABLE 7

Correlations between Independent Variables and Sociometric Responses Received by Leaders

Independent Variables	Sociometric Responses		
	Choices	Rejections	Degree Choice[a]
Problem Solving	.45[b]**	−.44[b]**	.31[a]**
Role Discrepancy	−.58[b]***	.57[b]***	−.57[a]***
Attitude Discrepancy on Authoritarianism	−.06[c]	.11[c]	.08[a]

[a] Product-moment correlation based on 60 groups and measures in Study D. Sociometric item on friend in field used.
[b] Rho correlation based on 26 groups in Study A and measures in Studies A and B. Responses to all sociometric items in Study B used.
[c] Product-moment correlation based on 99 groups and measures in Study B. Responses to all sociometric items in Study B used.
** $p < .05$, two-tailed test.
*** $p < .01$, two-tailed test.

Problem Solving and Role Discrepancy

Scores on PS and RD measures were obtained from *S*s both before and after administration of field problems; they were obtained as part of an interview and as part of a questionnaire; and different scoring procedures were employed. Statistical support for the hypotheses was obtained in Studies A and C, regardless of the particular method used. The amount of indulgence men had received from their leader was inferred from their perception and statement of their leader's behaviors. The intercorrelation between group PS and RD scores was marked in Study A, but smaller in Study D, although still significant. PS items represented universal needs for these populations. However, in measuring RD the data revealed in Study A that *S*s differed in role behaviors desired of SLs. Also, *S*s perceived considerable variability in the behaviors of different squad leaders. On the other hand, members of effective squads did not differ from members of ineffective squads in the desired behavior or in the perception of leader behavior.

The findings in Studies A and C for PS and RD and group performance were not replicated in Study D. Indeed, there was a tendency for those ACs perceived as problem solvers and meeting role expectations to have crews that performed more poorly

than others. The failure to obtain significant results in the predicted direction may be attributed to two major reasons: the lack of a legitimate basis for most crew members to respond to the items on PS and RD, and the motivational context within which the research was conducted.

First, in the Air Force study most *S*s had never worked together before entering the survival course. Moreover, because of the need to separate some 12-man school crews into two 6-man crews for purposes of testing on the CREWSCAT, 10 of the 60 crews tested were led by leaders who were not even ACs of their crews during the school's course. Even for those test crews with the same AC as the school had designated, many men found the items asked specific questions on the leader-follower relationship about which they had had little, if any, experience. Unfortunately, the investigator encouraged the men to respond to the items on the assumption that where there was a lack of knowledge the responses would be randomly distributed.

Second, during the period of this study Air Force personnel had a generally antipathetic attitude toward the survival course (fully understood by the investigator who had completed the survival course that previous summer). Personnel resented anyone who tried to get them to "put out"; the course was demanding and arduous. In addition, the leaders in the Air Force study as compared with the leaders in the Army studies did not have their group's performance reflect as directly on them. The ACs were largely responsible for the conduct of their crew members. However, a leader in a situation such as this cannot escape involvement in his group's performance. It is simply suggested that effective performance by crew members on the CREWSCAT did not provide the *degree* of indulgence for their leaders as the comparable situation in the Army studies.

Under these circumstances it would not seem surprising to find a tendency for men to accept sociometrically leaders who placed fewer task demands on them. Indeed, there was a consistent tendency for the sociometric response for the AC to be negatively correlated with CREWSCAT performance. It cost the men little to make the leader look good through giving him positive ratings on a paper-and-pencil questionnaire. Reciprocality of indulgence could have operated in a different manner than explicitly studied here. If the men indulged the leader through rating him favorably on the sociometric measures, then it might follow that the same situation would occur when men responded to PS and RD items in a situation in which they had little, if any, concrete data to use in giving an objective response. For this reason, it may be worthwhile to examine the possible determinants of sociometric responses in this context.

The sociometric response can be viewed as a prediction by Individual B of the need satisfaction he would derive from Individual A under a specified circumstance or type of situation. B's prediction of his satisfaction with A may be based on relevant past experiences that B has had with A. In such instances, A may have provided indulgences for B, and B seeks this relationship again. Here, one might expect to have a legitimate test of the theory of the reciprocality of indulgences. On the other hand, B may choose A on the basis of perceiving in A some characteristic which from previous experience with other people leads him to expect need satisfaction from A. However, B is not indebted to A, hence there may be no exchange of indulgence from A.

Masling et al. (1955) have contended, on the basis of the analysis of these data and other data in a cross-validating study with a Navy population, that sociometric choices given to a person in the structured leadership position reflect, in part, choices given to the status position rather than to the particular individual. Such choices do not permit one to infer a feeling of indebtedness or obligation on the part of the respondent to the leader. Moreover, the investigator has observed that military personnel sometimes resent giving sociometric responses and when pressed to do so tend to give favorable responses.

B may reject A sociometrically because the latter failed to provide B with an indulgence or actually caused B a deprivation.

However, B's previous knowledge of A's performance may lead B to express his evaluation of A's competence through a positive sociometric expression. Also, then, these sociometric responses do not necessarily represent an indebtedness based on a previous indulgence. The assumption cannot be made, then, that B's sociometric response necessarily reflects a measure of past indulgences or lack of indulgences from A.

Evidence that the sociometric technique is an ambiguous measure of prior indulgence has been given in an experiment conducted by Smith (1959). In a laboratory setting, using Air Force personnel drawn from the same population but not the same *S*s as those in Study D, Smith employed the expression by his *S*s of the desire to remain in a crew as a measure of cohesiveness. He found no relationship between cohesiveness and the willingness to sacrifice the attainment of one's own goal for the group goal.

In Studies B and D marked correlations were obtained between scores on the PS and RD measures and sociometric responses. While scores on measures of PS and RD related significantly with group performance in Studies A and C, but not Study D, sociometric choices for the leader failed generally to relate significantly with performance in Studies A, B, C, and D. In Study D the correlations present were even negative. Nevertheless, one of the 10 sociometric items in Study B elicited choices from squad men for leaders which correlated with statistical significance with performance. The item concerned the confidence a squad man would place in his SL's covering him if he led an advance into an enemy town. Perhaps choices for the leader in this situation reflected a rating on an SL's competence. However, neither the summated choices nor rejections for all items for the SL in Study B independently correlated with statistical significance with criterion RSFP scores.

Studies B, C, and D yielded positive correlations between the leaders' sociometric choices of their men and group performance. Even though these correlations reached statistical significance only in Study B, the consistency of their direction in the three studies warrants attention. The most reasonable interpretation seems to be that a leader's responses represented largely ratings on the competence of his men. It would appear doubtful that much, if any, of the variability in *group* performance scores could be attributed to the leader's increased efforts on the field problems as a consequence of the indulgences his men had given him in the past.

Data in these studies indicated that although the reasons for responses to PS and RD items and sociometric measures may overlap for group members, the former two measures did tap, in addition, that type of indulgence which differentiates effective from ineffective groups in Studies A and C. However, in Study D where men generally lacked the experience to respond to PS and RD items, scores followed sociometric evaluations for the AC in tending to correlate negatively with CREWSCAT performance.

Scores on the three sociometric items, PS and RD in Study D all correlated negatively with performance, albeit without statistical significance. The results did suggest some tendency for rejection of a leader who demanded effective performance. In Study B sociometric rejections for the leader tended to correlate negatively with squad performance. Consequently, when simply the number of sociometric responses, regardless of whether they were choices or rejections, received by the SL was correlated with RSFP scores a statistically significant positive relationship was found.

Havron, Greer, and Galanter (1952) tested the hypothesis that there would be a positive relationship between the SL as a taskmaster and squad performance. It was difficult to devise questions in this area that the respondent might not perceive and, consequently, answer in terms of PS items. The hypothesis was not confirmed through the overall score derived from the five items employed. However, the item which bore the greatest face validity to what was supposed to be measured yielded responses which differentiated with statistical significance between effective and ineffective squads in the direction predicted. More members of effective squads said their SL

kept after the men to make them do their best.

A leader may often have to motivate some men against their wishes and, hence, they may reject him on sociometric-type items. As previously mentioned, it may be that some men may choose the SL sociometrically if he does not "push" them. Then, the sociometric-type response can be a measure of the lack of past deprivation, and apparently not indicative, or negatively so, of effective performance on a field problem.

The sociometric, PS, RD, and ADA measures can be placed on a continuum in that order of value in indicating the type of indulgence that related to effective performance in the situations in this series of research studies. Generally, as one goes from the sociometric to the ADA measure the items become more specific and place greater constraints on the *S* for responding objectively and concretely. For the first three measures one is, however, ultimately dependent on the *S*'s willingness and ability to depict accurately the nature of various relationships with the leader. In responding to the authoritarian measure the *S* had no idea how his scores would be used; the nature and amount of indulgence were inferred.

In Study D where many men had had little, if any, experience with their leaders, responses to PS and RD items appeared to be given on a basis similar to sociometric responses. Although both PS and RD scores correlated significantly in Study C with squad performance, the former correlation was smaller than the latter. In responding to RD items, as data in Study A suggested, *S*s may have been less able to identify the more socially acceptable or desirable role behaviors and, hence, responded more directly or objectively (Edwards, 1959).

One could conclude that groups where leaders are perceived by their men as problem solvers are prone to be both effective and ineffective and that groups where the leaders are not perceived as problem solvers are apt to be more consistently less effective. Wilson, Beam, and Comrey (1953) related the characteristics of supervisors to group effectiveness through determining by ratings those workshops which were high, low, and in the middle on effectiveness. These investigators found that supervisors of both the high and low effective groups as compared with supervisors of the middle groups had attitudes of greater sympathy and helpfulness toward subordinates. Actually, in Study A there may have been a greater variability in problem solver scores for the SL of ineffective squads. Moreover, in Study D a statistically significant greater variance in criterion scores was found among a group of crews high as compared with a group low in their problem solver scores for their leaders.

Authoritarian Attitude Discrepancy

A number of studies have focused on the possible differential effect of the use of authoritarian and democratic principles of organization on group performance. This interest has stemmed, at least partially, from concern with the political structures of large societies. Clear-cut, repeatable results from these "miniature" studies are still wanting. The problem appears quite complex and conclusions may be reached only for specific situations. Moreover, to generalize from research on small groups to large societies seems fraught with difficulties. Societies are comprised of various sizes and types of interrelated groups and the measure of an effective society may be debatable. Even in the study of the effects of different political principles on small group behavior one should not overlook the influence of the personality of group members and the nature of the group task.

Haythorn et al. (1956a) reported greater effectiveness in performance for groups composed of equalitarians or low scorers on the F Scale (Adorno et al., 1950). However, the task required the cooperation of group members and dealt with problems in human relations. Consequently, the generalizability of this finding to task situations of a different nature might be questionable. Haythorn, Couch, Haefner, Langham, and Carter (1956b) failed to demonstrate that the more effective groups were those where the leader and men were homogeneous, that is, the

leader and men were both equalitarian or the leader and men were both authoritarian. Their groups viewed a human relations problem on film and then discussed and determined what they felt should have been the proper dialogue. Observers rated the homogeneous groups as more cooperative, with better communication and higher morale than the heterogeneous groups. However, the data were equivocal on whether homogeneous groups were more effective than heterogeneous groups. Leaders may have lacked personal concern over group performance. In addition, the student leader and the other students may not have had sufficient previous association to develop a basis for the reciprocality of indulgences. Perhaps the most important reason for the equivocal findings was the need for groups to have many kinds of solutions available for specific problems.

Heterogeneity may be more important for effective group performance when the group task requires the consideration of a variety of possible solutions. Hoffman (1959) reported that he found that groups with members having different personalities performed more effectively. Such groups had more possible solutions available, increasing the likelihood of the eventual employment of the best solution. However, the heterogeneous groups were more likely to have problems of affect. The results of the Hoffman (1959) study, then, lend some insight into a possible reason to explain why results of the Haythorn et al. (1956b) study were not consistent with the present findings.

Groups in this series of research studies were faced with few truly problem solving situations. Group performance evaluations were based largely on group members' responses to situations for which they knew well what was appropriate from previous training experiences. Most points on the field problems, and especially the Army RSFPs, simply depended on the willingness of men to expend their energies.

The studies presented here involved groups whose social patterns were ideally authoritarian in nature because of the requirements of the larger groups of which they were a part. It is well to note in passing that the results between personality characteristics and group performance were obtained with groups whose social systems were largely authoritarian. In some groups, then, the external values were at variance with the personality values of the leader and men. Blau (1960) has contended that "structural effects" on behavior can be separated from the effects of personality on interpersonal relationships; the present research would appear to support this position.

Studies B and D offered no data to conclude that either the authoritarianism of the leader or men related directly to performance on field problems. Moreover, the leader's authoritarianism did not correlate with that of his men. The heterogeneity on authoritarianism of all men in a group in Study B did correlate negatively with performance; although the correlation was in the same direction in Study D, it was not significant. For both Studies B and D the groups were separated into thirds according to total group mean on authoritarian scores. Six individual correlations were determined between group heterogeneity and performance. No consistent pattern of correlations occurred with either study or between studies. F Scale scores were reported in the literature to be negatively correlated with intelligence (Titus & Hollander, 1957). Consequently, there would have been some basis for expecting the authoritarianism of the leader or men to be negatively correlated with performance. For the groups in Study A, Havron, Greer, and Galanter (1952) reported SLs of effective squads were more intelligent than leaders of ineffective squads; there was no difference between men of the effective and ineffective squads on intelligence. In Study D there was no relationship between a measure of intelligence and the authoritarianism of leaders. Moreover, a negative correlation approached significance between scores on a measure of a leader's intelligence and CREWSCAT scores (Greer et al., 1957a, 1957c). Incidentally, the umpire's rating of the cooperation (independent from CREWSCAT score) within the group during the field problem yielded a significant

negative correlation with scores on the measure of the leader's intelligence, that is, the more intelligent the AC, the less judged cooperation in the crew.

Different instruments were employed to measure the authoritarian-equalitarian attitudinal syndrome in Studies B and D. Both indexes omitted, however, items on projectivity, sex, and superstition. In responding to the EI *S*s selected the best statement representing their position, thus avoiding the possible problem of a set to agree with an item. Nevertheless, significant results were obtained for the theory of the reciprocality of indulgences for each measure of authoritarianism. In completing the authoritarian measures the *S*s had no way to tell how the scores would be used; therefore, these responses did not reflect any biasing influence as a consequence of such knowledge. Moreover, as a possible measure of indulgence, authoritarianism was not restricted to A and B having previously had a history of leader-follower relationships; authoritarianism relates to a wide range of attitudes and interpersonal behaviors.

The measures of authoritarianism used in these studies do not yield a separate score on authoritarianism and equalitarianism. The lack of an authoritarian response in relevant situations suggests that other kinds of responses must be made. A number of these other responses can be classified as equalitarian. Therefore, the question is raised of whether one might not simultaneously be to different degrees authoritarian and equalitarian. Perhaps they have a low positive correlation. Nevertheless, the measuring procedure confounds these two possible variables. Consequently, the ADA scores may also represent a confounding of two different influences.

The ADA hypothesis was found tenable when tested with rifle squads on a field problem and for aircrews going through a survival and evasion field problem. Moreover, in both Studies B and D it made no difference for the tenability of the hypothesis whether the leader was more or less authoritarian than the group. In addition, the data indicated that the hypothesis was tenable for all positions on the authoritarian continuum and not just the extremes. Simple discrepancy was the important matter. In these studies the measure of ADA was generally the difference between the leader's score and the *mean* for the men in his group. Another possible index of this discrepancy was the sum of the differences between each man's score in the group and the leader's score. This latter procedure was also used in both Studies B and D and negative correlations remained statistically significant. Nevertheless, in each instance in which the summation of individual differences was used a correlation was obtained a few points lower than when the discrepancy was based on the group mean. One might expect the summation method to yield a more sensitive measure of leader-men discrepancy, since the same mean may represent different distributions of scores.

However, it may be that beyond a certain point in the discrepancy between Individuals A and B in authoritarianism there is no different effect in terms of behavior. Any such psychological insignificant difference would still be reflected in the statistics and, hence, adversely influence the degree of the correlation. The use of the mean score for the men may mask this effect and yield a higher correlation. This conjecture seems provocative and may deserve further research effort. On the other hand, the mean may simply be a more reliable index than the summation of individual differences.

A logical conclusion would be that in the absence of knowledge about the authoritarianism present in a group of men one increases the chances of effective performance by appointing a leader for the group who scores in the middle of the authoritarian distribution; on a probability basis the attitude discrepancy should be the smallest. Adams' (1954) findings and the statistical analyses in Studies B and D indicated that the midscoring leader on authoritarianism was, indeed, more liable to have effective groups than extreme scoring leaders. These empirical relationships raised the possibility that the ADA correlations were actually due to midscoring leaders simply being more effective leaders. This

situation could account for the relationship between small ADA scores and effective performance.

An individual who is neither authoritarian nor equalitarian may conceivably, other conditions equal, have available and be more likely to employ those solutions or behaviors which are most appropriate to the situation. The midscorer may be characterized by a greater repertoire of responses and a greater willingness to use any specific responses to meet leadership problems. Courtney, Greer, and Masling (1952) found both types of extreme scorers to be more consistent or rigid in the expression of their attitudes. Moreover, if heterogeneity in group composition can lead to effective performance in some situations, heterogeneity in personality may also under certain circumstances be an asset for individual effectiveness. However, the key is probably in the nature of the criterion of performance or task. Some problems may be more amenable to solution through a uniform type of approach and others by a mixed approach. Problem solving in the field problems was of minor significance, since the appropriate behaviors were generally fairly well known. In addition, the nature of the problem did not relate directly to authoritarianism or equalitarianism.

Further analyses of data in Studies B and D indicated that the discrepancy between the leader and men on authoritarianism contributed to the empirical relationship, at least to a major extent, independently of a direct personality determinant of the leader. Moreover, it was ascertained that the ADA correlation with performance could not be attributed to an artifactual relationship with mean authoritarian scores for the men in a group. This research has by no means ruled out the possible importance in some situations of the authoritarian or equalitarian personality in directly determining effective individual and group performance.

Although the artifactual basis of the ADA correlation with performance was not demonstrated, there still remains a question on the actual causal determinant or determinants of the correlation. Facile communication, harmony, and predictability of each other's behavior may often be associated with effective group performance. Under these circumstances, group members would be less likely to have their energies bled off into intrarelational problems and could, consequently, direct more of their concern and efforts to the group task. The importance of understanding communications seems beyond cavil. Moreover, bickering and conflicts among group members could detract from group performance. Havron, Greer, and Galanter (1952) found effective performance associated with groups whose members perceived themselves as sharing the same interests. Cohesiveness and field performance were positively correlated for squads used in Study B (Greer, 1955). Where members had more accurate social perceptions of group relevant matters, they were found in several studies to perform more effectively (Greer, Galanter, & Nordlie, 1954; Greer et al., 1957a; Havron et al., 1954). Accurate social perceptions could lead group members to act more confidently and hence more effectively on group tasks. In one study (Greer et al., 1954) it was stated, regardless of the determinants, effective SLs tended to have more accurate social perceptions than the ineffective leaders and the most popular individuals were more accurate than the less popular.

When the leader and men have similar attitudes, the amount of internal group conflict may be reduced through their similar understanding and structuring of problem situations and agreement on solutions. Additionally, the fact that leader and men hold similar attitudes may lead them to believe subjectively they can more accurately predict the behavior of others; and such behavior may actually be more predictable than when leader and men differ in attitudes. Leader and men should, then, act with more confidence in the achievement of group tasks. These explanations could theoretically just as well account for the empirical relationship between ADA and group performance as the reciprocality of indulgences.

Facile communication, harmony, and behavioral predictability as contributors to group performance would not appear in this context as necessarily part of the indulgence

rubric. Furthermore, these possible facilitators of effective performance do not have to stem alone from the similarity of attitudes on authoritarianism. On the other hand, the reciprocality of indulgence involved in the similarity of authoritarianism between leader and men stresses, at least, in part, the importance of the leader's behavior and the extent to which this behavior satisfies the men. However, the leader's behavior prior to the problem itself may have served also as a basis for the men to infer some of the basic personality structures or values of the leader. The ability of men to identify with the leader and for them to feel he identifies with them may be an important aspect of the reciprocality of indulgence as it relates to similarity in authoritarianism.

An examination of the nature of the criterion problems suggested that the importance of communication between leader and men was quite minimal. Most interaction, especially in the Army studies, was in terms of gestures and short commands or replies. Since the field problem scores reflected few real problem solving or decision making situations, the harmony in a group would not seem to have been particularly critical in directly influencing group effectiveness. Other data of Studies C (Havron et al., 1954) and D (Greer et al., 1957a, 1957b) provided no evidence that cohesiveness or harmony as measured among group members was necessary for effective performance. Of the three, the ability of group members to predict one another's behavior or attitudes most consistently correlated with effective performance on the field problems. Results for the original research for Studies A (Greer et al., 1954), C (Havron et al., 1954), and D (Greer et al., 1957a, 1957b) showed a significant positive relationship between the ability of group members to predict accurately some aspect of the group's behavior and effective performance. The behaviors predicted by group members in these studies were generally not related directly to the behavioral requirements of the criterion problems.

The nature of the criteria appears to minimize the probability that the empirical relationship stems largely from the operation of variables other than the reciprocality of indulgences. Nevertheless, the results of some relevant statistical analyses can be examined. If the ADA correlations were the consequence of the facilitation of communication between leader and men, harmony between leader and men, and/or the ability of leader and men to predict each other's behaviors, then the ADA correlations would seem likely to follow the same pattern as correlations obtained between total group heterogeneity on authoritarianism and group performance. Indeed, although the dyadic relationship between the leader and each group member may be the most significant of the two-person relationships in the group, the group heterogeneity correlations on authoritarianism, reflecting the effects across *all* relationships in the group, might be expected not only to follow the same pattern as the ADA correlations but might also be expected to be even greater in size. In addition, it seems reasonable to assume that, other conditions constant, ease of communication, harmony, and predictability of behavior in groups would naturally increase with a group's age. Then, regardless of whether the leader and men or total group is considered, the importance of similarity on authoritarianism to group effectiveness could be expected to diminish or be masked as the period of group interaction increased. On the other hand, the size of the ADA correlation might be expected to increase with a group's age, at least for some period of time, as there were more and more opportunities for the men to receive or not receive the relevant indulgences from the leader.

The significant correlation for group heterogeneity on authoritarianism and group performance in Study B was not replicated in Study D, although the ADA was significant in both studies. The heterogeneity correlations for the total group did not follow the pattern of the ADA. In Study B group heterogeneity on authoritarianism correlated significantly with performance for only the youngest group of squads; ADA correlated significantly with the field problem for only the oldest group of squads. Consequently, it seems questionable to attribute the signi-

ficant correlations obtained to the same underlying causes. Over time the leader is apt to have provided more or relatively fewer indulgences to his men and, therefore, the larger correlations for the older groups. Additionally, if one contends that it takes group members time to learn each other's attitudes, then the heterogeneity correlations should seemingly have been significant and markedly larger for the older groups. The data indicated that the ADA correlations did not derive from a correlation between group heterogeneity on authoritarianism and performance.

For *S*s in Study B the length of time in the same squad correlated significantly with the criterion (Greer, 1955). However, for *S*s in Study D there was no statistically significant association between a group's integrality and performance (Greer et al., 1957a, 1957b), suggesting, perhaps, a lack of variability in the variable of time together. The correlation between authoritarian leader-men discrepancy and group performance increased over time in both Studies B and D with the increase most marked in Study B. Indeed, for that group of squads in Study B where men had been together the longest ADA correlated with the criterion −.48. The size of the ADA correlation, and the fact that it was obtained in that group of squads where the men had been together the longest, can be interpreted to indicate the independent importance of the reciprocality of indulgence as a major contributing factor to the obtained empirical relationship.

The evidence seems to indicate that the ADA correlations are largely a function of the reciprocality of indulgences. Indeed, the nature of the criteria and the data appear to give little, if any, support to the other possible explanations for the empirical relationship. Moreover, the results appeared to indicate that ADA is an effective determinant of group performance regardless of whether the leader-men difference on authoritarianism occurs at either extreme of the continuum or in the *middle*. Generally, one thinks of authoritarian or equalitarian behavior. Therefore, the effectiveness of ADA at the extremes of the authoritarian continuum seems reasonable. Perhaps ADA's effectiveness in the middle of the continuum can be attributed simply to a satisfaction or dissatisfaction with the least amount of consistency in authoritarian or equalitarian manifestations. On the other hand, it may be that there are some qualitatively different behaviors for the midscorers just as there is between authoritarianism and equalitarianism. Sanford (1950) and Courtney et al. (1952) reported on the results of administering both the A-E scale and open-ended questions to a number of *S*s. The data did provide some statistically significant evidence that there are qualitatively different responses for midscorers, authoritarians, and equalitarians.

The failure of the PS and RD measures to correlate with CREWSCAT performance in Study D points up the apparent differences in types of indulgences. These two measures were significantly related to performance in two previous studies, including Study A where the ADA measure also yielded a significant relationship. However, only the attitude discrepancy between the leader and men correlated significantly with performance in Study D. These contrasting results for the different measures of indulgences were not statistically inconsistent. The group scores on ADA in Study B did not correlate significantly with the group scores on PS and RD in Study A. The latter two measures did correlate significantly with each other. Moreover, whereas sociometric measures significantly related to PS and RD measures, there was no significant correlation with scores on the measure of ADA. These same significant and nonsignificant correlations were found again in Study D, even though the measures of the variables were not identical.

Since both the RD and ADA measures relate to types of individual behaviors, one might have expected a significant relationship between them, at least for the earlier studies. However, the RD measure may have included items referring to specific behaviors overlapping little, if any, with the authoritarian continuum. Additionally, the data have indicated possible biasing influences on the RD responses and, conse-

quently, scores on the RD measure may have represented less valid indications of the same type of indulgence as scores on the ADA measure.

The abortive use of the PS and RD measures in Study D and the success with ADA can, perhaps, be explained in terms of the differential opportunities for indulgent experiences. Both Studies B and D provided evidence that the ADA correlations increased in size with the ages of the groups; the phenomenon was, however, more apparent in Study B than D. Therefore, one could surmise that generally the ages of the groups in Study D were not sufficient for the responses that men gave about their leaders on the PS and RD items to reflect very accurately the nature of the pertinent indulgences, if any, that the men had received. The fact that the men seldom had experience enough to make such specific statements has been described earlier. In Study D the men's responses to the A-E scale should have been as reliable and valid as under any other condition; however, their answers to the PS and RD items were probably not reliable and even less valid. The utility or effectiveness of the ADA measure depended not only on the validity of the A-E scores but, perhaps, with equal importance on the kind of experiences that group members had had with their leader on the CREWSCAT before and during the administration of the field problem.

Although the leader-follower relationship is an important facet of relevancy for the authoritarian continuum, this personality syndrome also relates clearly to a large number of other social behaviors and ideological matters. Consequently, indulgences can be exchanged outside of the context of a leader-follower situation. It will be remembered that before the CREWSCAT problem all men had received intensive training together back at Stead for 7 days and arrived at the testing area after spending 4 or 5 additional days "surviving" together in tepee camps in the High Sierra. Based on this investigator's observations and personal experience as a trainee, this close and continuous association under difficult circumstances led to all group members having considerable interaction and knowledge of one another. With this background experience and the interaction of the designated leader and men on the CREWSCAT the ADA correlated significantly in the predicted direction with group performance.

The ADA correlation for the youngest group of squads in Study B was practically zero. Unlike the Air Force situation there was no certainty that all men in the group of youngest Army squads had had any prior experience with one another comparable to the 11 or 12 days Air Force personnel had with one another just prior to their field problem. Indeed, there was considerable doubt. It was common knowledge that in some cases, although the men in a squad on the problem came from the same platoon, they hardly knew one another. In order to fill its quota of squads for the researchers, a platoon on occasion would not have enough regular or integral squads and, then, would send "put together" squads comprised of men throughout the platoon. Moreover, the investigator, who participated in the rating of 12 or more squads on the RSFP, did not observe as much opportunity as was the case in the Air Force study for the interaction of leader and men and for the leader's behaviors to be perceived differently enough to indulge or not indulge according to the authoritarian continuum. These factors, then, may have accounted for the essentially zero correlation between ADA and performance for the youngest group of squads in Study B.

No evidence has been found to suggest that the significant ADA correlations were statistical artifacts of some other relationships. Moreover, the possibility of other theoretical explanations for the empirical relationships was explored; such examinations left the theory of the reciprocality of indulgences to appear the most legitimate explanation for the ADA correlations. Finally, the plausibility has been established of the independent operation of ADA as a measure of indulgence. These results strongly suggest that for work tasks com-

parable to those in this series of research studies the proper small group leader-men arrangement on authoritarianism might considerably increase production or effectiveness at no extra cost in total manpower. Moreover, in the absence of knowledge about the authoritarianism of group members the most effective leader, on a probability basis, will be the one who is a midscorer on the authoritarian continuum.

Field vs. Laboratory Research

The group problems in these studies were built to measure group competence on military tasks and to later serve training needs. Possible predictor variables did not influence the nature of these criterion problems. Consequently, it was not surprising that the correlations relevant to the theory of the reciprocality of indulgences were not any higher than .48. Under laboratory control the relationships might have been quite marked. Nevertheless, the theory of the reciprocality of indulgences appears to provide predictive utility even under these field conditions.

Field research carried out in the military cannot match the rigor of the experimental laboratory situation. Such field research courts the gamut of vicissitudes which tends to decrease the reliability of measurements of independent and dependent variables. Moreover, laboratory *S*s are apt to be docile, sympathetic, intelligent, and often they can be rewarded; *S*s in the military field situation can be quite antipathetic. The use of controls in the laboratory research can maximize the possibility of demonstrating predicted relationships. Conversely, some results in the laboratory may never be capable of demonstration in the "dynamic" or challenging field environment. In the laboratory setting one can generally be more certain that a relationship between two variables is cause and effect or functional in nature. However, with a sufficient sample size in field research one can after the fact attempt to control for extrinsic variables through statistical manipulations. This approach was used in the several field studies reported here.

Theory of Reciprocality of Indulgences

The dyadic theory presented was that when Individual A satisfies a need for Individual B, then Individual B tends to satisfy a need of Individual A. The satisfaction of a need by another is an indulgence. However, indulgences may be given consciously or unconsciously. What is an indulgence may vary among people; its applicability may be quite narrow down to a specific individual, or up to groups of individuals, or to individuals almost universally. A leader's fairness and objectivity can be an indulgence to all his men. On the other hand, a leader's political and religious beliefs may provide an indulgence for some of his men and not for others. The same applies for his educational and social background. An individual may indulge others through his behaviors which stem from his general attitudes or values and/or through such values permitting others to identify with him and, thus, also deriving a feeling of acceptance. Several kinds of indulgences were involved in these studies.

The empirical relationships in this research supported the theory of reciprocality of indulgences and were consistent with Homans' (1950) concept of the "exchange of favors." He stated that there is a universal norm in human behavior that when Individual A performs a favor for B, then B is expected to perform a favor for A. Torrance's (Torrance & Mason, 1958) notion of "negative identification," however, can be used to predict the same empirical consequences, but the nature of motivations inferred differ. According to Torrance, when the leader's values differ from those of his men, the men are motivated to behave negatively in terms of the leader's goals. For him negative identification occurs when A's background, personality, and/or values are so different from B's that the latter cannot identify with A. B, then, tends to disagree with and act in opposition to the opinion of A, regardless of the value or accuracy of A's statements. Hollander (1958) has presented a theory for explaining why one individual may still receive group acceptance and status although de-

viating from common group expectancies, while another individual deviating to no greater extent may have sanctions applied to him or even be expelled from the group. The first person, according to the theory, has accumulated a greater number of "positively-disposed" impressions or "idiosyncrasy credits" in perceptions of relevant others than the latter individual. The former individual finds himself in the favorable position through his task performance, generalized characteristics, and fewer deviations from expectancies. Hollander's theory is not necessarily inconsistent with those of Homans, Torrance, or the one presented here. However, the theory is more manifestly consonant with that of Torrance in focusing on the source of deprivational behavior in interpersonal relationships.

The Torrance and Hollander theories, then, highlight the deprivational facet in interpersonal behavior. When Individual A does not satisfy a need for B or creates a dissatisfaction for B, then B does not satisfy a need for A or creates a dissatisfaction for A. Perhaps this is the "reciprocality of deprivations." The leader's failure to provide an indulgence for his men may be a deprivation. The men may have reciprocated this deprivation by not carrying out their proper roles on the field problem. A theory of the reciprocality of deprivations, it might be argued, is just as explanatory of the empirical results as the theory of the reciprocality of indulgences. However, it cannot account for the source of motivation that causes the men to carry out their role expectations; a theory of reciprocal deprivations explains why men may not carry out their role expectations. It seems that in the present context as well as in many others both indulgence and deprivational theories may be needed to explain the various motivational and behavioral consequences. These two theories could be subsumed under a theory of the "reciprocality of kind"; Individual B's behavior in relationship to Individual A's needs is going to be a function of A's satisfaction of B's needs.

Any of the aforementioned theories, it seems, can have a much more comprehensive application than just to interpersonal relationships. Individual A, who has indulged or deprived Individual B, may represent a group of individuals or values of a social system embodied in one or more individuals. B, who may actually stand for more than one individual as in these studies, will react in accordance with his needs to the effect of A. Groups in this research can be conceived as representing small social systems with expected role behaviors. The degree to which the social system functioned properly was a function of A's need satisfaction of his men. The knowledge of the determining variables in interpersonal relationships may provide a basis for understanding some phenomena on another level of analysis.

Gouldner (1960) has discussed the "norm of reciprocity" and its implications for the stability of social structures. He believes that the motive for repayment of "gratifications" becomes internalized such that there is a norm that obliges one to repay an indulgence from another. This aspect of the reciprocality of indulgences would seem to bypass those elements of the leader-follower relationship where the focus is on the power of the leader over his people and the coercion he can employ to control them (Bass, 1960). The position here does not necessarily discount the importance of power and coercion in leader-follower relations, but rather it is suggested that these factors, perhaps part of the reciprocality of deprivations, cannot account for all of the motivations in interpersonal relationships, and, hence, in the present research it is not sufficient to explain group effectiveness. People may have a model, image, self-concept, or norm for themselves derived, in part, from the never ending socialization process. The extent to which their behavior in reciprocating indulgences adheres to their ideals may provide self-indulgence or deprivation.

Present research results supported a position of the independent importance to group effectiveness of that aspect of the leader-follower relationship that does not require factors of power and coercion. The nature of the group problem was such that leaders

generally had little, if any, knowledge of the performance of individual men. Therefore, the leader had practically no basis to hold individual men responsible for effective or ineffective group performance. Society's situation would appear to be often comparable. Moreover, since the leader's indulgences to his men included his role behaviors and personality manifestations which continue to be displayed regardless of group performance, the group members were in little, if any, danger of losing these indulgences even if they performed poorly.

In testing hypotheses based on the theory of the reciprocality of indulgences in this research, two assumptions were involved. First, it was assumed that the men on the field problem could in fact provide indulgences for their leaders through appropriate performances. However, the indebtedness of B to A does not necessarily imply that B can always satisfy the debt. For instance, on the field problems there were some situations where scoring depended upon sheer technical knowledge. Regardless of a man's desire to indulge the leader, if he did not possess the prerequisite knowledge he could not act properly. Nevertheless, in both the Army and Air Force situations most of the scoring reflected the simple willingness of the men to comply with the leader's orders and expend the appropriate energy.

Second, the leader must want to have his group perform well. Through observations and the context in which the tests were made it seemed reasonable to assume leaders generally wanted to do well and their men were aware of this desire. Nevertheless, the leader's need in this area is a variable. Personal impressions and some analyses of the data suggested that as a group Army leaders were more desirious of their groups' performing effectively as compared with the Air Force leaders. Although each AC on the CREWSCAT was told he could come to the research office at the end of the school course to determine his crew's performance, no more than a handful ever took this opportunity. It is not suggested that ACs had no involvement in the performance of their crews, but rather that they may have had less involvement in the effective performance of their groups than they would have had in a different context, with other group members, and a different task. However, in both Studies B and D there was some indication that the size of the ADA correlations was positively related to the degree to which the leader was anxious for his group to perform well on the field problem. Consequently, in testing the hypotheses in this research it was important to be able to assume that group members were capable of performing well and that such performance would actually be an indulgence for leaders.

Additional research could shed valuable light on various facets of the different reciprocalities. For instance, under the rubric of the reciprocality of kind it may be possible to relate some personality variables to whether one is more prone to be influenced in behavior by moral obligation, a possible phase of the reciprocality of indulgences, or revenge, a general aspect of the reciprocality of deprivations. The absence of an indulgence may be the same as a deprivation to some but not to others. Again, some personalities may be more oriented to repaying indulgences than building up credits which they can later cash in. In fact, some people resent being indebted to others. Moreover, some individuals may be more apt to reciprocate indulgences and deprivations of the very same nature rather than some other areas.

Greer et al. (1954) presented data suggesting leaders of more effective squads have more accurate social perceptions concerning their group members than leaders of less effective squads. Accurate social perception may be associated with the ability to judge the needs and means of satisfaction for others, and, consequently, make more certain the operation of the reciprocality of indulgences. Another research problem relates to the possibility that the reciprocality of indulgences may not be a simple *quid pro quo* between individuals. Indeed, emphasis on conscious bargaining procedures may often be detrimental to the process. In addition, beyond a certain point it may be of no avail for Individual A to indulge

further Individual B; some of the present data suggested this possibility. Again, the unit of indulgence for one person may differ from others. Another possibility for study is that B may indulge A only under conditions in which B believes A has a legitimate right to have the specific need. Experimental and field research are required to substantiate further present findings and to pin down more definitively the situations and conditions under which the various reciprocality theories are relevant and explanatory.

The effective leader, then, is probably one who is sensitive to his group members' needs and to his ability to satisfy these needs. Furthermore, he clearly delineates his expectations in regard to group tasks and he is cognizant of group member capability. The effective leader balances as appropriate and possible indulgences and deprivations for his followers. In those cases where group members are heterogeneous in certain needs or the leader naturally deviates generally from group member values the effective leader will be one who cloaks true feelings and assumes neutrality or the midposition on the continuum. Platitudinous but true, the effective leader may have to represent different things to different group members. On the other hand, although certain leadership characteristics may be universally desirable, the nature of group members and tasks faced by the group often require quite varied leadership characteristics. Unfortunately, there must be a limit to a leader's ability to assume different forms and characteristics, and especially when there are simultaneous requirements. Therefore, an individual's potential as an effective leader may vary considerably with the nature of the group members and the kind of group task.

The dyadic theory that "when Individual A satisfies a need of Individual B, then Individual B tends to satisfy a need of Individual A" now deserves further qualifactions or emphases. Individual A must actually have a relevant need; B must be capable of indulging this need. The extent to which B indulges A's need appears to be a function of the intensity of that need. Moreover, B may indulge A only in those areas where B feels A has a legitimate right to expect indulgence. Finally, B can reciprocate A's indulgence to him only as a function of the opportunities afforded.

Summary

In a series of four field research studies involving 272 Army infantry rifle squads and Air Force crews several specific hypotheses were tested. These hypotheses were derived from the theory of the reciprocality of indulgences. The theory indicates that the more a leader satisfies the needs of his men the harder they will work for him on a field problem and, therefore, the better the group will perform. The independent variables used were the perception by group members of the leader as a problem solver, the extent to which the leader was perceived as meeting the role expectations they had for an ideal leader, and the similarity between leader and men on authoritarianism. The dependent or criterion variables were group performance scores on realistic field problems. Umpires rated specific group behaviors to test situations which covered 6-hour periods.

Each of the three hypotheses, that is, problem solver, role discrepacy, and authoritarian similarity received statistically significant support in initial studies and was then replicated in a second study. However, in testing the first two hypotheses for the third time, inconclusive results were obtained. Analysis of the situation suggested that the subjects had been requested to supply answers to items for which they had little, if any, basis for responding. Field observations and various additional analyses of the data indicated these men, then, responded on the basis of whether they simply liked their leader. In this particular study and in the others there was generally no significant positive relationship between the sociometric choices by the men for their leader and group performance.

Through the use of the interpersonal theory of the reciprocality of indulgences it

was possible to account for some of the variance in the effectiveness of group behavior. With the use of various statistical analyses and the apparent reconciliations of discrepancies with other studies it becomes increasingly clear that in order to understand fully the various determinants of group performance one must examine the leader's nature and behavior, the character of group member needs, and the kind of group task or goal. Laboratory research is required to test further the conclusions drawn and other field and laboratory studies can explore the effects on group effectiveness of interpersonal relationships similar to the reciprocality of indulgences.

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